

THE RELATIONSHIP OF TRAUMATIC LIFE EVENTS AND SYMPTOMS OF POST
TRAUMATIC STRESS TO ACADEMIC PERFORMANCE AND THE INFLUENCE
OF LEARNED RESOURCEFULNESS ON THIS RELATIONSHIP IN A
NONCLINICAL POPULATION OF COLLEGE STUDENTS

By

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Abstract of Dissertation Presented to the Graduate School of the University of Florida in
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This study investigated the influence of learned resourcefulness on the relationship between traumatic life events and academic performance in a nonclinical sample of college students. The study examined the following two hypotheses: 1) there would be differences in academic performance, as measured by the Academic Problems Scale of the College Adjustment Scales, overall GPA, and most recent term GPA in association with the level of trauma experienced; and 2) the relationship between academic performance and level of trauma would be mediated (influenced) by the level of learned resourcefulness, as measured by the Self-Control Schedule. Also of interest to the study were 1) the prevalence rate in a nonclinical college sample of having experienced

traumatic life events and of meeting the criteria for Posttraumatic Stress Disorder (PTSD), 2) whether there are gender differences in the prevalence rates of having experienced traumatic events in general and of having experienced specific types of traumatic life events, and 3) whether there are differences in the level of learned resourcefulness in association with the level of trauma experienced.

Participants ($N=216$) completed a Participant Demographic Data/Score Sheet, the Life Events Questionnaire, the Self-Control Schedule, the Academic Problems Scale (APS) of the College Adjustment Scales, and the Trauma Symptom Inventory. Overall GPA and most recent term GPA were also collected for each participant. The results of two Factorial MANOVAs with level of trauma as the independent variable and gender as a controlled factor revealed no significant differences in academic performance as measured by APS scores, overall GPA, and most recent term GPA in association with level of trauma (group). Thus hypothesis 1 was not supported. The results of two factorial MANOVAs with learned resourcefulness (SCS), level of trauma, and SCS X level of trauma as independent variables, and gender as controlled factor found no significant interaction between learned resourcefulness and level of trauma (group). Thus hypothesis 2 was not supported.

Consistent with the findings in earlier studies, 83.8% of the sample in the present study reported having experienced at least one traumatic event at some point in their lives. Seventeen percent of the total sample met the criteria for Post Traumatic Stress Disorder. Gender differences for specific types of trauma were also found. Significant differences were found in level of learned resourcefulness in association with the level of trauma

experienced. Specifically, participants who met the criteria for PTSD had significantly lower levels of learned resourcefulness than did participants who had either never experienced a single traumatic event, or who had experienced at least one traumatic life event, but who did not meet the criteria for PTSD.

It was concluded that PTSD and life trauma history are important issues that psychologists, especially on college and university campuses, would do well to be prepared to recognize and treat. Furthermore, it was concluded that facilitation of learned resourcefulness may be an important goal in counseling with college or university students who are experiencing symptoms of PTSD.

CHAPTER I INTRODUCTION

Prevalence rates for exposure to traumatic stressors vary from 39% in a sample of young adults (Breslau, Davis, Andreski, & Peterson, 1991) to 84% in a nonclinical sample of college students (Vrana & Lauterbach, 1994). In general, being male increases the likelihood of exposure to traumatic stressors. However, one study has found that 70% of women have experienced some traumatic stressor during the course of their lives (Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). Research shows that men are more likely to have been exposed to combat, accidents, and fires, while women are more likely to have become the victims of physical or sexual abuse or assault, either as a child or as an adult (Vrana & Lauterbach, 1994; Boney-McCoy & Finkelhor, 1995; Breslau et al., 1991)

Resnick et al (1993) point out that differences in prevalence rates among studies are likely due to differences in the set of traumatic events inquired about, as well as to how each event, especially those events such as sexual assault, has been operationalized. For instance, an individual is less likely to respond in the affirmative when asked if s/he has ever been raped or sexually assaulted than if s/he is asked about the occurrence of behaviorally specific events (e.g. asking such questions as "before or after a designated age, has anyone used pressure, coercion, or nonphysical threats to have sexual contact with [her or him]?", and defining sexual contact to mean any type of sexual contact

between the respondent and someone else including kissing, fondling, touching, or penetration.).

Also, earlier studies (such as Heltzer, Robbins, & McEvoy, 1987) assessed the prevalence of exposure to traumatic stressors in conjunction with an assessment for posttraumatic stress disorder. In other words, only those events subjectively thought to be associated with posttraumatic stress disorder were included in the inquiry. Later studies have not only assessed the prevalence of exposure to traumatic stressors separately from posttraumatic stress disorder, but have used a broader range of events, and included such factors as whether there were incidents not specifically asked about in which the individual perceived a threat of death or serious injury to self or others.

Only two studies have investigated the prevalence of life trauma in nonclinical college populations (Vrana & Lauterbach, 1994; Segal & Figley, 1988). The Vrana and Lauterbach study found that 84% of their sample had experienced at least one traumatic event. Segal and Figley found a similar prevalence rate of 80%. One of the purposes of the present study is to constructively replicate the portions of the existing studies related to prevalence and to extend them to include an inquiry into the prevalence of PTSD in a nonclinical college population.

Studies have shown that not only do students under high levels of stress show significant reductions in their memory/recall (Kramer, Buckhout, Fox, & Widman 1991), but that high stress levels are associated with decreases in GPA (Felson & Wilcox 1992). The Yerkes-Dodson law offers a theoretical model for understanding this phenomenon. Yerkes and Dodson (1908) found an inverted U-shaped function of better performance

with difficult tasks and medium stress levels, and worse performance with low or high stress levels. Mandler's (1993) explanation for the phenomenon is that for low levels of arousal, the focus of attention (i.e. the current conscious content) is likely to be the main task at hand, and with moderate increases in arousal, these central events will receive exclusive access to conscious capacity. For higher levels of arousal, especially when external sources (such as reminders of a traumatic event) demand attention, task irrelevant behavior is likely to increase, which limits conscious capacity. This leaves very little conscious capacity with which to face the central task.

Based on the Yerkes-Dodson model, we can expect that students who meet criteria for PTSD (presumably a "high stress" condition) and also those who have never experienced a traumatic life event (presumably a "low stress" condition) will generally demonstrate poorer academic performance (as measured by scores on the Academic Problems scale of the College Adjustment Scales, overall GPA, and most recent term GPA) than those students who have experienced at least one traumatic life event but do not currently meet criteria for PTSD (presumably a "moderate stress" condition).

Rosenbaum's (1990) concept of learned resourcefulness has been shown to mediate the effects of stress on various physical and emotional conditions. Learned resourcefulness refers to a set of well-learned behaviors and skills by which a person controls her or his behavior. In addition to investigating the prevalence of posttraumatic stress disorder and traumatic events in the nonclinical college student population, the present study also seeks to investigate whether learned resourcefulness mediates (influences) the relationship

between level of trauma and academic performance, as measured by overall and most recent term GPA and the Academic Problems subscale of the College Adjustment Scales.

The purposes of the present study are 1) to constructively replicate those portions of the Vrana and Lauterbach (1994) and the Segal and Figley (1988) studies which examined the prevalence rate in a non-clinical sample of college students for having experienced traumatic life events, 2) to extend the work of these researchers by examining the prevalence rates for meeting the criteria for Posttraumatic Stress Disorder in a non-clinical sample of college students, 3) to examine the relationship between level of trauma experienced and academic performance (as measured by the Academic Problems Scale score of the College Adjustment Scales, overall GPA, and most recent term GPA), and 4) to examine whether level of learned resourcefulness (as measured by the Self-Control Schedule) is a mediator of (an influence on) any relationship between level of trauma experienced and academic performance.

The present study, using a nonclinical college student sample, will investigate the following hypotheses:

- 1.) There will be differences in academic performance (as measured by scores on the Academic Problems subscale of the College Adjustment Scales, overall GPA, and most recent term GPA) in association with the level of trauma experienced. Level 1 is having never experienced a single traumatic incident (Group I). Level 2 is having experienced one or more traumatic experiences but not meeting criteria for PTSD (Group II). Level 3 is having met the criteria for PTSD (Group III).

2) The relationship between trauma experience level and academic performance will be mediated (influenced) by level of learned resourcefulness.

In addition, the following research questions will be investigated:

1. What is the prevalence rate for having experienced traumatic events and for meeting criteria for PTSD among college-aged adults?
2. Are there significant gender differences in the prevalence rates for having experienced traumatic events in general and for specific types of traumatic events in a non-clinical college sample?
3. Are there significant differences in level of learned resourcefulness in association with level of trauma experienced?

CHAPTER II REVIEW OF THE LITERATURE

Stress

The Concept of Stress

Selye (1993) offers a brief history of stress as a biological concept. He points out that the subject of stress was greatly advanced by nineteenth century French physiologist Bernard in 1879. Bernard observed that the internal environment of an organism must remain fairly constant despite changes in the external environment. He believed that it was this "fixity" of the internal environment that was the condition of free and independent life. In other words, the organism tried to maintain a condition of homeostasis. In 1885, a Belgian physiologist by the name of Fredericq expressed the view that in living beings, any disturbing influence calls forth a compensatory activity in an effort to neutralize or repair that disturbance. Cannon, an American physiologist, actually suggested the term "homeostasis" to refer to this phenomenon (1939). Homeostasis comes from the Greek words homoios, meaning similar, and stasis, meaning position.

Cannon's research established the existence of several very specific mechanisms designed to protect the body from hunger, thirst, hemorrhage, or agents tending to disturb the body's normal temperature. He also established the existence of specific mechanisms which regulate blood plasma levels, levels of sugar, protein, fat, and calcium (Selye, 1993). Cannon also emphasized the stimulation of the sympathetic nervous

system, with the resultant discharge of hormones from the adrenal glands during emergencies such as pain or rage. This phenomenon is most familiar as the "fight or flight" response.

Selye observed that any toxic substance introduced into the body produced the same three types of changes. These changes included enlargement and hyperactivity of the adrenal glands, shrinkage of the lymphatic structures, and deep, bleeding ulcers in the stomach and intestines. He also observed that these responses were also evoked by cold, heat, infection, trauma, hemorrhage, nervous irritation, and other stimuli. It was at that point that Selye (1936), who has come to define stress as the nonspecific result of any demand on the body, whether that result is mental or somatic, first described the biologic stress syndrome, which later became known as his general adaptation syndrome (GAS).

According to the GAS, when an organism is exposed to a "noxious" agent, whether biological or environmental, it passes through three stages. First, there is an "alarm" reaction. In other words, all the forces of the organism are roused to the defense. Selye holds that this condition cannot be maintained indefinitely. If the agent is so drastic that continued exposure becomes incompatible with life, the organism dies within the first few hours or days. If, however, the organism can survive, it then moves into the "resistance" stage. During this stage, the body of the organism attempts to bring itself back to its former condition. After still further exposure to the noxious agent, interestingly enough, Selye observes that the organism reaches a third stage, the stage of "exhaustion." Seemingly, something of the ability to adapt to noxious agents is lost in the very process of adapting. This, he believes, results in a wearing out of the organism. In

humans, Selye believes these three stages are generally reminiscent of childhood, where there is relatively low resistance and excessive response to any kind of stimulus, adulthood, during which the body has adapted to most commonly encountered agents and one's resistance is increased, and old age, or senility, which is characterized by loss of adaptability and eventual exhaustion, ending with death. According to the GAS, any challenge (stressor) to the homeostatic environment of the body results in the same sequence of responses. Consequently, this view minimizes the specific nature of the challenge.

Lazarus (1993) presents a different understanding of the concept of stress from that presented by Selye. His understanding acknowledges that there are similarities in physiological responses to a variety of both positive and negative environmental stimuli, while placing greater emphasis on the emotional manifestation of that response. Lazarus argues that although it is important to know that an individual is experiencing stress, it perhaps is more important to know that s/he is feeling joy, sadness, anger, or grief, for in knowing the emotional response invoked, one has a much clearer picture of the nature of the stressor being faced. Indeed, Lazarus believes that the experience of stress should be more properly considered a subset of emotion.

Lazarus (1993) contends, along with several others (Rosenbaum, 1990; Santiago-Rivera, 1995; Ptacek, Smith, & Dodge, 1994) that what makes the difference in the emotional manifestation of stress is the cognitive appraisal the individual makes of the stressor. Appraisals of loss result in grief, appraisals of threat result in feelings of fear and anxiety. According to Lazarus and Folkman (1984), there are two types of appraisal:

primary, and secondary. Primary appraisal has to do with a person's judgments about the meaning of or the level of threat associated with the stressful encounter, while secondary appraisal involves an individual's beliefs about viable options for coping.

Mandler (1993) views emotion as the concatenation of cognitive evaluative schema with visceral arousal. In other words, evaluative cognitions provide the quality of the experience (happy, sad, angry, anxious), and the visceral activity provides its intensity. The "visceral activity" relates to some sympathetic nervous system activity such as increased heart rate, sweating, gastrointestinal upset, etc.

Mandler focuses on an idea developed by Hebb (1946), who demonstrated that fear occurs in response to perceptual discrepancies and that fear of the strange does not occur until familiarity and expectations have been developed. Mandler, 1993 and Mandler and Watson, 1966 believe that a consideration of discrepancies and interruptions in daily life is useful to understanding what is usually considered to be stressful. In other words, when the world is as we expect it to be, we do not experience stress; however, when something discrepant occurs, whether positive or negative, we experience stress to varying degrees. Mandler (1993) goes on to say that human thought is also capable of producing ambivalence and alternative outcomes for both positive and negative events, such as fear of the loss of a loved one and anticipation of possible negative outcomes even for the most joyful occasions (i.e. such thoughts as "suppose I fall while walking down the aisle", or "what if my child is born deformed"). These thoughts also provide discrepancies in our expectations, and consequently cause stress.

Mediators of Stress

Ideas regarding what constitutes discrepancy vary from individual to individual such that what is appraised as stressful for some is par for the course for others. Even where an event is appraised as discrepant in general, there are differences in the levels of stress experienced by a particular individual, and in how each individual copes with perceived stressors. This observation has led to much research investigating the factors that mediate how stressful situations are appraised and coped with by the individual.

Bandura (1989) developed the concept of self-efficacy as a means of explaining how some individuals cope with stress more successfully and effectively than others. He postulates that self-efficacy, which has been defined as the individual's estimate that a given behavior will lead to a given outcome and that s/he can successfully initiate that behavior, is situation specific. That is, an individual can have high self-efficacy in academics, but low self-efficacy in interpersonal relationships or with regard to other behaviors and situations. Hence, for an individual with high academic self-efficacy, an exam situation would evoke less stress and better coping, whereas an individual with low academic self-efficacy would experience greater stress and exhibit poorer coping skills. In fact, Dunn (1989) found that students with higher academic self-efficacy also had higher grade point averages than those with low academic self-efficacy.

According to Bandura (1977), an individual's expectations for self-efficacy derive from four sources: performance accomplishments (learning that occurs through personal experience in which one achieves mastery over a task), vicarious experience (learning which occurs while watching others perform a task), verbal persuasion (changing

individual's expectations by exposure to information and exhortations from another person concerning the performance of particular tasks), and physiological states (such as sweaty palms or racing heart), which provide feedback to individuals that they believe to be predictive of success or failure in a particular situation. The first three sources give the individual a schema for what is expected in a particular situation such that when events arise, they do not appear to be discrepant with what the individual expects for that situation. The situation is experienced as familiar and, as mentioned earlier, would not be evocative of stress nor would it necessitate unusual coping strategies.

Scheier and Carver (1985, 1987) have developed the concept of dispositional optimism, which is the general expectancy for positive outcomes, especially in difficult and ambiguous situations. They contend that optimism is associated with better physical and psychological adaptation to stressful life circumstances, perhaps because optimists are more likely to rely on problem-focused coping, a technique more likely to foster successful outcomes, and less likely to use avoidance processes such as venting their feelings and disengagement.

Another factor has been identified and articulated by Antonovsky (1990) to explain differences in individual abilities to cope with stress: sense of coherence (SOC). Antonovsky defines SOC as follows: "The sense of coherence is the global orientation that expresses the extent to which one has a pervasive, enduring, though dynamic feeling of confidence that a) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable (comprehensibility); b) the resources are available to one to meet the demands posed by these stimuli (manageability);

and c) these demands are challenges, worthy of investment and engagement (meaningfulness)" (Antonovsky, cited in Rosenbaum, 1990 p.33). This concept seems to combine Mandler's ideas regarding the nature of stress as arising from the unfamiliar (comprehensibility), and Bandura's ideas regarding self-efficacy (manageability), while adding the component of meaningfulness, which Antonovsky believes to be most important to good coping. Antonovsky argues that without this motivational component, high comprehensibility and high manageability are likely to be temporary. Comprehensibility is next in importance, as high manageability is contingent upon understanding. However, he continues that manageability is also important, since if one does not believe personal resources are at one's disposal for coping with the stressor, meaningfulness will be affected, and coping efforts weakened.

Learned resourcefulness, still another factor thought to mediate stress and coping, refers to a set of well-learned behaviors and skills by which a person controls her or his behavior. Rosenbaum's (1990) concept of learned resourcefulness posits that in order to engage in certain behaviors, one has to have the necessary skills and behaviors in one's basic behavioral repertoire. His underlying assumptions are that most people acquire those behaviors and skills even without any formal training, that the amount of learned resourcefulness varies from person to person, and that for any one person, learned resourcefulness is fairly stable over time (Rosenbaum, 1990). Learned resourcefulness is thought to affect the person's self-efficacy beliefs rather than the appraisal of the situation as stressful. This concept will be explored more fully at a later point.

Other factors identified as moderators of stress include ego development (Loevenger, 1976), cognitive processing styles such as monitoring (the extent to which an individual is alert for and sensitized to threat relevant information), and blunting (the extent to which the individual cognitively avoids or transforms threat-relevant information, thereby “blunting” the psychological impact of objective sources of danger) (Miller, 1990), hardness (Kobasa, 1979; Orr & Westman, 1990), which is a personality construct thought to moderate the stress-illness relationship, and help-seeking behavior (Nadler, 1990).

Traumatic stress, traumatic stressors and their prevalence.

As we have seen, an individual's appraisal of a stressor as either discrepant (Mandler, 1993; Hebb, 1946) or comprehensible (Antonovsky, 1990) can vary considerably depending on the extent to which any of several factors are present. However, there are some stressors which are universally appraised as being both highly discrepant with general expectation and incomprehensible, that is, neither structured, predictable nor explainable (Antonovsky, 1990). These stressors include various types of interpersonal violence, natural disaster, and accidents.

The types of traumatic stressors, particularly those involving interpersonal violence, that an individual is likely to be exposed to are strongly related to developmental phase, age, sex, ethnicity, and socioeconomic status (Pynoos, Sorenson, & Steinberg, 1993). Breslau et al. (1991) also noted that housing, educational, and employment factors are related to exposure to chronically dangerous situations.

Victimization is, by far, the most commonly experienced traumatic stressor.

Victimization of children and adolescents is frequently due to sexual molestation or physical abuse (Pynoos et al., 1993). The likelihood of childhood victimization is high. Straus, Gelles, and Steinmetz (1985) estimate that every year, one in ten children is severely physically abused (i.e. kicked, bitten, hit with an object, beaten, threatened with a gun or knife, or had a gun or knife used against them) by their parents. Russell (1983) concluded that as many as one in three girls is sexually abused before age eighteen, and one in four by age fourteen. Hopper (1987) notes that one in six boys will also be sexually abused before age sixteen. Others note that children are also at risk for witnessing various types of violence to family members (Malmquist, 1984; Pynoos & Eth, 1985; Carlson, 1984; Pfouts, Schopler, & Henley, 1982).

Boney-McCoy and Finkelhor (1995) studied a national sample of 2000 youths between the ages of 10 and 16. They found that just over 40% of the sample reported having experienced some type of victimization. In this study, victimization included aggravated assault, simple assault, parental assault, nonparental family assault, attempted kidnaping, genital violence, and any sexual assault. While almost 50% of the males had experienced victimization, 33.3% of the females in the sample reported being victimized in some way.

Gender played a role in which types of interpersonal violence a youth was likely to have experienced (Boney-McCoy & Finkelhor, 1995). The males were much more likely to have experienced aggravated assault and simple assault by nonfamily members, as well as genital violence not reflective of sexual assault (such as being kicked in the genital

area). Females, on the other hand, were much more likely to have been sexually assaulted.

Victimization of adults includes violence by persons known to the victim as well as by those unknown to the victim. Breslau et. al. (1991) found that in a sample of over 1000 young adults, 39% had experienced at least one traumatic event. The pattern and the types of assaults more likely to be experienced reflected the same gender differences as those seen in children.

Vrana and Lauterbach (1994) studied a nonclinical sample of college students to determine, in part, the prevalence rate for traumatic events in this population. They found that 84% had experienced at least one traumatic event. Of those students, one third had experienced more than one traumatic event. This study, however, included events such as combat (2%), accident (33%), death of a significant other (49%), natural disaster (28%), fire (15%), rape (13%), witnessing death (13%), abuse as an adult (11%) or as a child (6%), crime (10%), and events so traumatic that the individual "can't tell" (9%). Once again, males were more likely to have experienced a traumatic event. Of those males who had, the event was more likely to be related to combat, a life threatening situation, fire, or an accident. Consistent with the childhood victimization patterns observed by Boney-McCoy and Finkelhor (1995), females were more likely to have been victimized by rape or an abusive relationship.

In a study of a representative national sample of women, Resnick, Kilpatrick, Dansky, Saunders, and Best (1993) found that almost 70% of women had experienced some form of trauma. This study defined a traumatic event as including completed rape

(12.65%), other sexual assault (14.32%), physical assault (10.28), homicide of a family member (13.37%), any crime victimization (35.58%), and noncrime disaster only (33.31%). Based on the 1989 U.S. Bureau of Census data, they estimate that over 66 million women over the age of 18 have experienced at least one traumatic event during their lifetime (Resnick et al., 1993).

Natural disasters such as those caused by earthquakes, windstorms, tsunamis, floods, landslides, volcanic eruptions, wildfires, and other calamities have killed 3 million people worldwide over the past two decades, and adversely affected the lives of at least 800 million more people (Weisaeth, 1993). In the U.S., the Federal Emergency Management Agency declared 75 major disasters, including blizzards, severe storms, flooding, wildfires, tornadoes, and hurricanes in 1996 (FEMA, 1997). In the Vrana and Lauterbach study (1994), 28% of their sample had experienced a natural disaster at some time in their lives, while 33.31% of the sample of women studied by Resnick et al. (1993) reported having experienced such an event.

What traumatic events (stressors) have in common is that at each moment during the event, there is an internal appraisal of threat. The primary emotion is usually fear, which can range from terror to helpless despair. In addition to fear, cases of interpersonal violence also invoke feelings of violation and deep betrayal (Pynoos et al., 1993). The actual experiencing of the traumatic stressor would be equivalent to the "alarm" stage of Selye's (1993) General Adaptation Syndrome, where the traumatic stressor serves as the "noxious" agent. Horowitz (1986) notes that following exposure to a traumatic stressor, the individual is left with the challenge of tolerating an intense emotional reaction that

requires increased efforts at emotional regulation. In other words, according to Selye (1993), the individual is now roused to the defense, both physiologically and psychologically.

Unlike exposure to common stressors, following exposure to traumatic stressors, the event may remain in prolonged, active memory, and constantly threaten to intrude upon and disrupt normal information processing (Horowitz, 1986). Also unique to the experiencing of traumatic stress is the finding that reminders of the trauma, especially in cases of interpersonal violence, stimulate intrusive thoughts and images related to the event, as well as renewed emotional distress and physiological reactivity (Pynoos et al., 1993). In other words, the individual experiences repeated returns to the “alarm” stage originally brought about by the trauma, given trauma-related cues.

Immediately following exposure to extreme stressors, an individual may experience generalized anxiety, narrowing of attention, apparent disorientation, anger or verbal aggression, despair or hopelessness, inappropriate or purposeless over-activity, outrage at the intrusion, and a profound sense of ineffectualness (Weisaeth, 1989, in Pynoos et al., 1993). When death or injury to others is involved, reactions may include uncontrollable and excessive grief, and intense guilt over behaviors of omission or commission specific to the event (Weisaeth, 1989 in Pynoos et al., 1993).

As with common stressors, individuals vary in their ability to cope not only with the traumatic stressor, but with the psychological disturbances following the event, and the subsequent challenges to their self-concept, meaning, and future orientation. Individual outcomes at one extreme may include moving into Selye’s (1993) “resistance” stage, in

which psychological equilibrium is returned almost to pre-trauma level. At the other extreme, it may include remaining "locked" in the "alarm" stage, in which the individual suffers severe trauma-related pathology and pervasive functional impairment. Trauma-related reactions may constitute recognizable patterns of psychiatric disorder including depression, alcohol and drug abuse, phobic, generalized anxiety, obsessive-compulsive, dissociative, or posttraumatic disorders (Winfield, et al, 1990). As posttraumatic stress disorder is of primary interest to this study, a closer examination of this disorder will now be undertaken.

Posttraumatic Stress Disorder

Diagnostic Criteria

The primary diagnostic criteria for posttraumatic stress disorder (PTSD), according to the latest version of the DSM, include re-experiencing the trauma, persistent avoidance of reminders of the trauma, and an increased level of arousal (Maxmen & Ward, 1995). Criterion A specifies that these symptoms must occur after an individual has been exposed to a traumatic event in which there was actual or threatened death or serious injury, or a threat to either her or his physical integrity or that of another. The individual's response must have been one of intense fear, helplessness, or horror (American Psychiatric Association, 1994, p.209).

Events generally associated with threats of harm and the experiencing of intense fear include combat, sexual assault, disasters, and physical assault. Implicitly excluded from this definition are common life occurrences such as bereavement, divorce, and serious illness; however, a spouse's sudden, unexpected death or a child's life-threatening illness

could qualify as a traumatic event (Morrison, 1995). More recently, being diagnosed with HIV infection has been added to the list of potentially traumatic experiences (Folkman, 1993).

The DSM Criterion B specifies that the traumatic event must be persistently re-experienced in one or more of several ways:

- 1) Recurrent and intrusive distressing recollections of the event. These recollections may include images, thoughts, or perceptions. In children, this may also include repetitive play in which themes or aspects of the traumatic event are expressed.
- 2) The individual may experience distressing dreams of the event. Children may experience frightening dreams, but without recognizable content.
- 3) The individual may act or feel as if the traumatic event were recurring. This often includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashbacks. Young children may specifically reenact the trauma.
- 4) The individual may experience intense psychological distress when exposed to internal or external cues that symbolize or resemble an aspect of the trauma.
- 5) The individual may actually experience physiological reactivity upon exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event. (American Psychiatric Association, 1994, p.209-210)

The DSM Criterion C specifies that the individual must demonstrate persistent avoidance of stimuli associated with the trauma, and a numbing of general responsiveness. This numbing must not have been present before the trauma. These characteristics must be demonstrated in at least three of the following ways:

- 1) The individual makes efforts to avoid thoughts, feelings, or conversations associated with the trauma.
- 2) S/he may make efforts to avoid activities, places, or people that arouse recollections of the trauma.
- 3) The individual may exhibit an inability to recall an important aspect of the trauma.
- 4) There may be markedly diminished interest or participation in significant activities.
- 5) The individual may experience feelings of detachment and estrangement from others.

- 6) There may be a restricted range of affect (e.g., unable to have loving feelings).
- 7) The individual may experience a sense of a foreshortened future (e.g. does not expect to have a career, marriage, children, or a normal lifespan). (American Psychiatric Association, 1994, p. 210)

The final DSM diagnostic criterion, Criterion D includes persistent symptoms of arousal which were not present before the individual experienced the traumatic event. This must be demonstrated in at least two of the following ways:

- 1) The individual may have difficulty falling asleep or staying asleep.
- 2) There may be irritability or outbursts of anger.
- 3) The individual may have difficulty concentrating.
- 4) S/he may become hypervigilant.
- 5) The individual may demonstrate an exaggerated startle response. (American Psychiatric Association, 1994, p. 210)

The DSM-IV also allows specification as to whether the disorder is acute or chronic. In the acute case, the symptoms are present for less than three months. The chronic case indicates that the symptoms have been present for more than three months. One may also specify a delayed onset. In this case, the symptoms appear at least six months AFTER the traumatic event has occurred" (American Psychiatric Association, 1994, p. 211). In Acute Stress Disorder, all the criteria are met for PTSD; however, the symptoms develop immediately following the traumatic event and last less than one month.

Prognoses for recovery seem to be related to the length of time in which symptoms are experienced and the type of trauma experienced. Studies focused on the process of recovery from criminal victimization have found that many victims recover from assault-related distress within a few months (Riggs et al., 1995). Atkinson, Calhoun, Resnick, and Ellis (1982, cited in Riggs et al., 1995) found that most rape victims who were

depressed shortly after the rape recovered within three months. Those suffering from rape-related PTSD and anxiety also recovered within three months. However, victims who still met diagnostic criteria for PTSD three months following the rape showed little improvement thereafter without treatment intervention (Riggs et al., 1995). Resick (1988) found similar patterns of recovery in nonsexual assault victims.

Predictors of PTSD

Researchers have identified several factors thought to be predictive of whether an individual will develop PTSD. Shalev (1995) reviewed 38 studies of predictors of PTSD and found that most of the predictors relate to pre-trauma vulnerability, the magnitude of the stressor, preparedness for the event, and the quality of the immediate and short-term responses.

Pre-trauma vulnerability includes genetic and biological factors, factors related to one's life course, rearing environment, mental health, and personality (Shalev, 1995). Biological factors may include family history of mental disorders, gender, and heightened conditionability. Personality traits such as neuroticism, introversion, and prior mental disorders also increase the risk for developing PTSD. Factors related to life events include early traumatization (e.g., childhood physical or sexual abuse) and exposure to similar trauma (e.g., repeated combat experience or rape experience). Negative parenting behavior, early separation from parents, parental poverty, and lower education have been found to predict both exposure to traumatic events and the development of PTSD following exposure (Breslau et al., 1991).

The intensity of the traumatic event (magnitude) has been found to contribute significantly to the development of PTSD. Green (1990) has proposed eight dimensions that seem to apply to different types of traumatic events and contribute to the level of intensity experienced: 1) threat to one's life and bodily integrity; 2) severe physical harm or injury; 3) receipt of intentional injury/harm; 4) exposure to the grotesque; 5) witnessing or learning of violence to loved ones; 6) exposure to a noxious agent; and 7) causing death or severe harm to another. Green's proposal seems consistent with the findings of Kilpatrick et al. (1989) that perception of threat to life, injury, and completed rape significantly predicted lifetime development of PTSD.

Studies have shown that adequate preparation for a stressful event, wherever possible, reduces the effect of stress on the individual (Shalev, 1996). Adequate preparation reduces uncertainty, increases one's sense of self-control, and teaches automatic responses that are less readily eroded under stress. This is consistent with Bandura's (1977) ideas regarding self-efficacy, Antonovsky's (1990) ideas regarding the manageability aspect of sense of coherence, and Rosenbaum's (1990) concept of learned resourcefulness.

Individual responses during the impact phase of the traumatic event are also predictive of the development of PTSD. Disassociation during or soon after the event was found to be highly predictive of PTSD, moreso than the effects of gender, education, age, and severity of the event (Shavel, 1995). Chaotic or disorganized responses such as freezing, stupor, or surrender, and the ensuing perception of events as uncontrollable and unpredictable strongly effect long-term outcome and the development of PTSD (Foa &

Rothbaum, 1989). According to Baum, Cohen, and Hall (1993), "one of the possible reasons for chronic stress following traumatic events is the disorganizing effect of loss of control and violation of expectations for regulating aspects of one's life" (p. 276). This is again reminiscent of Antonovsky's (1990) "comprehensibility" component of Sense Of Coherence.

Prevalence of PTSD and Comorbidity.

McFarlane and Girolamo (1996) report that the first epidemiological study of PTSD was part of the Epidemiological Catchment Area Study (ECA), and was carried out in St. Louis. That study found a lifetime PTSD rate of .5% among men, and 1.3% among women. However, quite a few more individuals were found to have experienced some symptoms after a trauma (15% among men and 16% among women) (Helzer et al., 1987). The rate of comorbidity with other psychiatric disorders (such as anxiety and depression) was also high. During a second wave of the same study, additional data were collected. At that time, an overall PTSD rate of 1.35% was found.

At the Duke University ECA site, lifetime and 6-month prevalence rates of 1.3% and .44%, respectively were found (Davidson, Hughes, Blazer, & George, 1991). In addition to reporting prevalence, Davidson et al. (1991) also reported that PTSD sufferers disclosed significantly more job instability, family history of psychiatric illness, parental poverty, experiences of child abuse, and separation from parents prior to age 10. PTSD was also associated with greater psychiatric comorbidity (e.g., somatization disorders, schizophrenia, and panic disorder).

In the study by Breslau et al. (1991) of over 1000 young adults aged 21-30, 39% of the sample had been exposed to a traumatic event. Of those exposed, 23.6% were found to meet criteria for PTSD. This yielded a lifetime prevalence rate of 9.2%. McFarlane and Girolamo (1996) also note that results of the National Comorbidity Survey of over 8000 subjects found a lifetime prevalence rate of 6.5% and a 30 day prevalence rate of 2.8%. This study also found that women had twice the risk of developing PTSD, and that those with PTSD were at increased risk for other psychiatric disorders, especially anxiety and affective disorders. Resnick et al. (1993) studied a national sample of women, and obtained a slightly higher lifetime prevalence rate of 12.3%, and 4.6% within the past six months.

The differences in lifetime prevalence rates noted by Heltzer et al. (about 1%) on the low end, and by Resnick et al (12.3%) on the higher end can probably be accounted for by the methodology used in these studies. Heltzer et al. used a version of the Diagnostic Interview Schedule which examined only those events thought to be related to PTSD in order to meet Criterion A. Other factors, such as perceived threat of death or injury, were not included. Only those events subjectively thought to be related to PTSD were included in the prevalence rates. It is also important to note that when assessing sexual assault, general terms like "rape" were used, which tended to decrease the likelihood that a victim would report having experienced such an event.

However, Resnick et al. (1993) assessed for Criterion A using behaviorally specific definitions of events for a broad range of stressors known to have the potential for producing PTSD. In contrast to Heltzer et al. (1987), they also assessed for PTSD

separately from their assessment of traumatic stressors. Resnick et al. note that most existing research on the prevalence of crime and civilian-related PTSD has suffered from one or more of the following limitations: "a) use of non-representative samples; b) failure to screen, using behaviorally specific definitions of events, for a broad spectrum of potentially stressful events capable of producing PTSD; c) use of assessment procedures that require the respondents to perceive the relationship between a given stressful event and PTSD symptoms; and d) failure to identify event characteristics such as physical injury or the perception of life threat that may be associated with differential rates of PTSD across broad event categories."(p. 985)

Psychological, Physical, and Social Impact of PTSD.

Certainly, the characteristics of such a distressing disorder as PTSD have a negative impact on the individual's physical and psychological well-being, and on social functioning. Particularly problematic would be the constant state of hyperarousal and the repeated re-experiencing of the trauma brought about by any of several unpredictably appearing trauma-related cues. Several researchers have found this to be the case.

Wise (1983) found that concentration camp survivors diagnosed with PTSD have been shown to have higher death rates, more psychosomatic complaints, and lower resistance to stress and infection than the general public. This is consistent with Creed's (1993) finding that 57% of a group of patients experiencing functional abdominal pain (no organic diagnosis) had experienced a severe event, compared to only 23% of those with an organic diagnosis. Creed also cited studies whose findings indicate a relationship

between severe stress and stroke (House et al., 1990), and non-organic back pain (Craufurd et al., 1990).

Peyser (1993) points to several studies demonstrating an increase in alcohol consumption in response to the tensions produced by stress (Masserman et al., 1945; Masserman and Young, 1946; Conger, 1952, cited in Peyser, 1993). Other studies (Forney, Forney, Sheets, et al., 1990; Vinyard, 1989, cited in Peyser, 1993) have found that both alcohol and drug intake are related to job and school stress. In traumatized adults, researchers have also reported high rates of drug and alcohol abuse (Keane & Wolfe, 1990; Kulka et al., 1990, cited in van der Kolk et al., 1996). It appears that alcohol effectively dampens PTSD symptomatology and may be the oldest medication for its treatment (van der Kolk et al., 1996).

Gruen (1993) reports that a number of studies have found a significant positive relationship between life stress, life events, and depression (Paykel, 1974; Sarason et al., 1978; Mitchel et al., 1983; Billings and Moos, 1985; all in Gruen 1993). In other words, depressed individuals were significantly more likely to have experienced negative life events, and to report higher levels of life stress. Rabkin (1993) concurs that stressful life events do play a role in the development of depressive disorders. However, she also reports that although there does appear to be an association between stress and the development of depression, precipitating stress is neither necessary nor sufficient to account for the onset of depression.

Traumatized individuals generally have shattered assumptions regarding what to expect from the world and how to view the self (Janoff-Bulman, 1992; Cole & Putnam,

1992; Herman 1992). These shattered assumptions, especially when the trauma occurs in childhood, generally result in impairment to the basic ability to trust and in poor self-concept, often including self-hatred. Many people who have been traumatized in their own families "have great difficulty taking care of their own basic needs for hygiene, rest, and protection, even as they are exquisitely responsive to other people's needs" (van der Kolk, 1996, p.196).

One would expect that an individual having difficulty establishing trust, as well as exhibiting poor self-esteem, would also tend to have poor interpersonal relationships. Van der Kolk et al.(1996) believe that the traumatized individual's inner sense of hatefulness or weakness, along with the unpredictability of feelings of emotional arousal, fear, and dissociation that are frequently triggered by reminders of the traumatic event generally express themselves in social isolation and avoidance of intimate relationships. This finding seems to hold true for traumatized children as well. Studies have shown that traumatized children often have difficulties playing with other children (Terr, 1988; Pynoos and Nader, 1988). Cicchetti and White (1990) found that after exposure to trauma, children either become excessively shy and withdrawn, or else bully and frighten other children. It is thought that because traumatized individuals experience such difficulty regulating their emotional responses and often attend to their subsequent feelings of arousal, they have difficulty attending appropriately to cues in their social environment (van der Kolk et al., 1996).

Stress and Academic Performance

Several studies have found that stress level is inversely related to academic performance as measured by grade point average (GPA). In other words, the higher the level of stress a student experiences, the lower the grade point average tends to be. Cozzi (1987) studied 227 first semester students in an urban, two-year college. She found that after controlling for pre-enrollment achievement, social desirability, and a number of remedial courses, higher stress levels diminished GPA. Wendell (1987), who studied a group of 97 undergraduate students at a four-year college, found that when differences in acquisition are controlled for, differences in recall are a function of stress such that subjects subjected to stress in an experimental situation recalled fewer words than those in the non-stressed condition.

Lloyd, Alexander, Rice, and Greenfield (1980) reported significant negative relationships between life stress and GPAs taken at subsequent 1- and 2-year intervals; however, no relationship between life stress and GPA was found for the third year after the stressor. Garrity and Ries (1985) also found that after controlling for gender and academic readiness (as measured by ACT scores), life stress was predictive of students' first-year GPAs. Both of these studies used predominantly nonminority students in their samples. However, Petrie and Russell (1995) studied a sample of minority and non-minority athletes. These researchers were primarily concerned with determining predictors for academic performance in minority versus nonminority student athletes. Consistent with previous studies, they found that life stress was predictive of academic performance as measured by GPA for minority students athletes. However, academic factors were found

to be more predictive of academic performance than was life stress for nonminority student athletes.

Mandler (1993), in his discussion of the effects of emotional stress on thought, memory, and learning, offered the Yerkes-Dodson law as useful for understanding the findings of Cozzi (1987) and Wendell (1987). Yerkes and Dodson (1908) found improvement in the performance of easy tasks with increasing stress. However, with difficult tasks they found an inverted U-shaped function with better performance when subjects experienced medium levels of stress, and poorer performance when subjects experienced either low or high levels of stress. Mandler (1993) explains the inverted U-shaped function phenomenon as a function of increasing arousal. He believes that for low levels of arousal, the focus of attention (i.e. the current conscious content) is likely to be the central event. With moderate increases in arousal, these central events will receive exclusive access to conscious capacity. For higher levels of arousal, especially when external sources demand attention, task irrelevant behavior is likely to increase, limiting conscious capacity. Very little conscious capacity then remains with which to face the central task.

Christianson and Nilsson (1984) found that performance on a memory task was poorer for verbal descriptors presented with mutilated faces (high stress condition) than for those presented with neutral faces. They also collected physiological data which showed that the subjects were physiologically aroused. Mandler (1993) assumes that this physiologic state of arousal, as well as the preoccupation with the mutilated faces, interfered with adequate encoding of the test material. Interestingly, Christianson and

Nilsson also found anterograde recall decrements on items which followed the traumatic ones. This finding suggests that encoding may have been interfered with by the lingering effects of the emotional items. Loftus and Burns (1982) also demonstrated that inserting a disturbing element into film produced a retrograde loss of detailed information.

The previously mentioned findings suggest that for the individual who is highly physiologically aroused, especially due to having been presented with disturbing external (actual disturbing subject matter) or internal elements (residual effects of being presented with emotional items), both the encoding of information and the recall of that information are compromised. Based on these findings, one could reasonably expect that the individual who meets criteria for posttraumatic stress disorder, with its characteristic re-experiencing of the traumatic event given external, trauma-related cues, and hyperarousal, will have poorer encoding and recall than those who do not meet criteria.

Learned Resourcefulness as a Mediator of the Effects of Stress.

The Concept of Learned Resourcefulness

Learned resourcefulness refers to a set of well-learned skills and behaviors by which an individual self-controls his or her behavior (Rosenbaum, 1990). In order to understand Rosenbaum's concept of learned resourcefulness, one must first understand the process by which he believes an individual controls her or his own behavior (i.e. exercises self-control).

Self-control behavior can be either "reformative" or "redressive." Reformative self-control consists of a set of behaviors that guide an individual through the process of change (Rosenbaum, 1990). The changes referred to are self-initiated interferences with

the smooth execution of well-established behaviors and the adoption of new kinds of behavior. For instance, an individual who has been told that her smoking is deleterious to her health exercises reformative self-control in the cessation of smoking, which has become a well-established behavior. Reformative self-control is also called for when a diet is pursued or a new exercise routine is initiated.

Redressive self-control consists of a set of behaviors by which an individual self-regulates internal responses, such as emotion, pain, and cognitions, that interfere with the smooth execution of an on-going behavior (Rosenbaum, 1990). The function of these behaviors is to achieve homeostasis and to resume the behaviors that were disrupted. The individual attempts to reduce the interfering effects that internal responses, such as anxiety, depression, and pain, have on current behavior. One example of redressive self-control is when an expectant mother uses breathing techniques to minimize the pain of childbirth.

Rosenbaum (1990) views human action as existing on a continuum. On one end are those actions that are automatic and require little or no thought. Some examples include speaking one's mother tongue or brushing one's teeth. On the other end of the continuum are those actions that require cognitive effort. Performing skills that have been newly acquired or responding to an unfamiliar situation would be placed at this end and are called "controlled" actions. Rosenbaum believes that in order to engage in controlled actions and to exercise self-control, one must engage what he has labeled "process regulating cognitions" (PRC)(Rosenbaum, 1990).

The function of PRC is to regulate the process by which an individual determines her or his own behavior. "Whenever a person monitors his or her actions, assigns meanings to events, attributes causality to what has happened, and develops expectancies for the future, he or she engages his or her PRC" (Rosenbaum, 1990, p.4). In contrast to one's automatic self-regulatory process which controls physiological reactions, self-control behaviors are controlled by deliberate cognitive processes and are under the voluntary control of the individual.

Rosenbaum (1990) makes four basic assumptions in his model for self-control. He assumes that 1) human behavior is goal directed; 2) self-control behavior is called for when individuals encounter obstacles in the smooth execution of goal directed behavior; 3) self-control behavior is always associated with certain process-regulating cognitions (PRC); and 4) there are multiple, interactive factors that influence the PRC and the self-control behavior.

Rosenbaum (1990) proposes that in order to engage in self-control behavior, an individual must go through several cognitive processes (PRC), based on Kanfer's (1977) model of self-regulation and on Lazarus et al.(1984) and Mandler's (1982) theories of stress. First, the individual experiences a cognitive and/or emotional reaction to real or imagined changes within her or himself or within the environment. In Mandler's (1993) terms, a discrepancy or disruption to what the individual commonly expects occurs. The disruption in ongoing behaviors, plans, or well-established expectations, may trigger automatic thoughts regarding one's self worth or basic beliefs, but these thoughts are not attempts to appraise the situation (Rosenbaum, 1990).

Following this initial reaction, the second cognitive process an individual must execute involves deciding whether the disruption is important for her or his well-being. Lazarus and Folkman (1984) refer to this PRC as primary appraisal. If it is determined that the disruption is not important to the well-being of the individual, self-control behavior will not occur and it is likely that the initial reactions will be ignored. However, if the individual determines that the disruption is, in fact, important to her or his well-being, the individual will move to the third cognitive process - that of determining whether a specified behavior will lead to a desired outcome. In other words, the individual tries to determine whether there is anything that can be done to minimize the adverse effects of the disruption. Lazarus and Folkman (1984) refer to this PRC as secondary appraisal. As before, if the individual determines that there is nothing that can be done to minimize the effects of the disruption, no self-control behavior will occur. However, if s/he determines that there is something that can be done to minimize the effects of the disruption, s/he will begin to consider various courses of action.

The final PRC involved in initiating self-control behavior involves the individual's assessment of whether or not s/he has the capacity to carry out the course of behavior that will lead to successfully minimizing the effects of the disruption (coping). This PRC is related to Bandura's (1977) concept of self-efficacy, referred to earlier. If an individual believes s/he is capable of executing the required behaviors, then self-control behavior will ensue. Otherwise, it will not.

Rosenbaum (1990) believes that an individual's "personality repertoires" partly account for the individual differences in self-control behavior. Staats (1975) defines

“personality repertoires” as constellations of complex skills which are evoked by many situations but also having the quality of providing the basis for additional learning. Rosenbaum (1990) believes that an individual’s personality repertoires have an impact on PRC. They influence how an individual reacts to disruptive changes, how s/he evaluates the effect of those disruptions on her or his well-being, how she assesses her ability to cope with them (self-efficacy), and how s/he plans to control her or his behavior in light of those changes (Rosenbaum, 1988). Rosenbaum considers Learned resourcefulness to be one personality repertoire.

Rosenbaum’s (1990) concept of learned resourcefulness consists of beliefs plus self-control skills and behaviors. It is assumed that these skills and behaviors are acquired by most people without recourse to formal training, that the degree of learned resourcefulness varies from person to person and that for any individual, learned resourcefulness is fairly stable over time. In terms of the self-control model, Rosenbaum does not expect that learned resourcefulness will affect how an individual assesses a situation (whether it is stressful or not or whether it is good or bad for well-being), but it should influence the individual’s self efficacy beliefs (regarding whether s/he can effectively cope with the situation) (Rosenbaum, 1990).

Studies Involving Learned Resourcefulness

Many of the studies related to learned resourcefulness have been concerned with adherence to health behaviors (reformative self-control) and coping with the effects of illness (redressive self-control), especially pain management and depression. It has been consistently found that individuals found to be high in learned resourcefulness (HR) are

more capable of adopting healthy behavior. For example, Katz and Singh (1986) found that HR individuals were more successful in giving up smoking on their own. Other studies have demonstrated that HR individuals are more successful in changing their eating habits (Rosenbaum, 1980a; Leon & Rosenthal, 1984; Smith, 1989, all cited in Rosenbaum, 1990), and in curbing their intake of alcohol (Carey, Carey, Carnrike, & Meisler, 1988, cited in Rosenbaum, 1990). Carey et al. (1990) also found that heavy drinkers were lower in learned resourcefulness than those who were light or moderate drinkers, and light to moderate drinkers were lower in learned resourcefulness than abstainers. Rosenbaum (1986) also found that learned resourcefulness was strongly associated with hemodialysis patients' adherence to fluid intake requirements. HR patients adhered more closely to fluid intake requirements than those patients who were low in learned resourcefulness (LR).

Malcolm (1985), in a study of 38 males and 52 females, found that there is a significant negative correlation between learned resourcefulness and depression. He also found that self-esteem was strongly related to learned resourcefulness. The latter finding is consistent with Rosenbaum's expectation that learned resourcefulness would effect self-efficacy, which has been shown to be related to self-esteem. Another study by Rosenbaum and Palmon (1984) involving 50 epileptic patients found that HR patients were significantly less depressed and anxious and coped better with their disability than LR patients. However, Lewisohn and Alexander (1990) found that while individuals who were low on learned resourcefulness were more likely to become depressed, learned resourcefulness did not appear to moderate the relationship between stressful events and the development of depression. They found that experiencing stressful events increased

one's chances of becoming depressed, and being high in learned resourcefulness decreased one's chances of becoming depressed, but once an individual became depressed his level of learned resourcefulness was irrelevant. It was suggested that further study in this area be initiated.

Another interesting study was done by Hanson (1993). He explored state- and trait-anxiety and depression as a function of learned resourcefulness. His results indicated that the HR group was significantly lower on the trait-anxiety variable than was the LR group. He also found a significant interaction between learned resourcefulness and level of life stress when the dependent variable depression was analyzed. While a post-hoc analysis indicated that there were no significant differences in mean depression scores across levels of life stress for the HR group, there were significant differences across levels of life stress for the LR group. Interestingly, he also found that the medium life stress group had a higher mean depression score than did the low or high stress groups, but that within that group (medium life stress) LRs had higher mean depression scores than HRs.

Only two studies have been identified examining learned resourcefulness and education. A South African study (Edwards and Riordan, 1994) found that Black students scored higher than White students in learned resourcefulness. The researchers concluded that this finding could be due to a selection effect, where only HR Black students succeeded in overcoming the practical difficulties of poverty and disruption of school activities to enter a university. Another study (Dunn, 1989) found that reentry students had significantly higher levels of learned resourcefulness and academic self efficacy than traditional students. However, he found that contrary to expectation, there

was no correlation between high levels of learned resourcefulness and academic achievement for either group. Dunn suggests that the relationship between learned resourcefulness and academic achievement is still unknown.

CHAPTER III METHODOLOGY

Participants

The sample consisted of 232 self-selected students from the Fall, 1997 semester of the Introductory Psychology course (Psychology 2004) at a major research university. Sixteen of the original participants were excluded from the sample due to 1) their failure to provide sufficient information to determine scores on the Trauma Symptom Inventory (one of the grouping variables)($n=5$), or 2) their self-reported involvement in mental health counseling (a population defining variable)($n=11$). Seventy-one percent (71%) of the remaining sample whose data was used in this research ($n=216$) was female; twenty-nine percent (29%) was male. The ages of the participants in the sample ranged from 17 to 35, with a mean age of 19.2 and a mode of eighteen (18). The sample was predominantly white (84.7%). However, Asian Americans comprised 7.9% of the sample, while Hispanic/Latino/Latina students made up an additional 3.7% of the sample. African Americans, International students, and those describing themselves as "Other" each made up less than 2% of the sample. The academic classifications of the participants included in the sample ranged from freshman to senior, with the majority identifying as either freshman (39.4%) or sophomore (25.9%). Juniors and seniors represented 15.3% and 6%

of the sample, respectively. The remaining 13.4% of the sample failed to identify their classification.

Measures

The **Participant Demographic Data/Score Sheet** is a researcher-designed instrument which was used to gather demographic data on each participant. This data included the gender, race, age, and classification of each participant. In addition, questions regarding whether or not the participant was currently receiving counseling from a mental health counselor, psychologist, social worker, or psychiatrist for any reason (and if so, what that reason was) was included in order to separate clinical from non-clinical participants. The bottom portion of this instrument was designated as being "For Researcher Use Only". In this area, scores for all other measures were recorded. These measures includ the Life Events Questionnaire, the Self-Control Schedule, the Trauma Symptom Inventory, the Academic Problems score from the College Adjustment Scales, overall GPA, and GPA From most recent term. Each of these measures are discussed later in this section. A Participant Demographic Data/Score Sheet was completed by each participant. A copy of the Participant Demographic Data/Score Sheet is attached as Appendix B.

The **Life Events Questionnaire** (LEQ) is a version of the Traumatic Events Inventory used by the Center for Sexual Assault/Abuse Recovery and Education at the University of Florida. No information was available regarding the author of this instrument or the date of its development. However, the Traumatic Events Inventory is very similar to the Traumatic Events Questionnaire (TEQ)(Vrana, 1992) used in the Vrana and

Lauterbach study (1994). Over a two-week test-retest interval, Vrana found that the Traumatic Events Questionnaire reliably assessed the number of events ($r=.91$) and the occurrence of specific events a person had experienced (range of $r=.72$ for life-threatening situations to $r=1.0$ for child abuse, mean $r=.80$) in 51 subjects drawn from a sample similar to that used in the Vrana and Lauterbach study (1994).

The Traumatic Events Inventory is used to assess whether a person has experienced any of several traumatic events, and the extent of that exposure. The Traumatic Events Inventory also asks at what age both the earliest or only, and the most recent experience of each event occurred. The Traumatic Events Inventory is usually administered by a therapist toward the end of the first or second session of therapy, but for the purposes of this study, it has been adapted for self-report and renamed the Life Events Questionnaire. The questions are behaviorally specific, yielding a much higher reliability rate than would questions of a more general nature. Although no data regarding reliability and validity could be obtained for this instrument, the instrument appears to have high face validity. Many times, a researcher wishes to conceal the purposes for which the questions are asked, therefore, high face validity is not desirable. However, in this study, high face validity was desirable in order to obtain the most complete responses.

The Life Events Questionnaire consists of 15 questions that ask whether the participant has ever experienced any of several traumatic events, and is based on the victimization screening procedure used by Resnick et al. (1993). The questionnaire specifically asks if the participant has experienced serious accidents either at work, in a car, or somewhere else, whether the participant has experienced any of several natural

disasters, behaviorally specific traumatic sexual events, behaviorally specific physical assaults, and whether the participant has witnessed someone being seriously injured or violently killed. An additional question asks whether the participant has experienced any other extraordinarily stressful situation or event, and asks the participant to specify what that was. This question is asked because there may have been other events that were subjectively experienced as traumatic that may not have been included in the preceding questions.

For each event listed on the Life Events Questionnaire, the participant is requested to answer "yes" or "no" to whether this has happened to them. If the participant answers "yes" to an event, s/he is also asked to list the age at which the event occurred or first occurred. If the event occurred more than once, the participant is also asked to list the age at which it most recently occurred. In addition, for each event the participant reports has occurred, s/he is also asked to report whether or not s/he thought s/he might be killed or seriously injured during the event. An estimate of the number of traumatic events reported having been experienced is calculated by adding the number of "yes" responses, and adding an additional number for each event where both an earlier and a later age were reported. The age of the earliest/only, and most recent traumatic event was collected simply to determine whether the temporal distance from a traumatic event should be considered as a covariate in the planned analysis for hypothesis 2. A copy of the Life Events Questionnaire is attached as Appendix C.

The **Self-Control Schedule (SCS)** by Michael Rosenbaum (1980) is a measure of Learned resourcefulness. This self-report instrument is designed to assess an individual's

tendencies to apply self-control behavior to the solution of behavioral problems. The SCS consists of 36 items rated on a 6-point scale indicating the extent to which a participant feels that item is characteristic of himself or herself. Choices range from -3 (very uncharacteristic of me, extremely undescriptive) to +3 very characteristic of me, extremely descriptive). It covers the following content areas: 1.) use of cognitions and self-instructions to cope with emotional and physiological responses (e.g. "When I do a boring job, I think about the less boring parts of the job and about the reward I will receive when I finish"; 2.) application of problem-solving strategies that include planning, problem definition, evaluating alternatives, and anticipation of consequences (e.g. "Even when I am terribly angry at someone, I consider my actions very carefully."); 3.) ability to delay immediate gratification (e.g. "Usually, I do the things I really like to do even if there are more urgent things to do."); and 4.) a general belief in one's ability to self-regulate internal events (e.g. "Quite often, I cannot overcome unpleasant thoughts that bother me.") (Rosenbaum, M. 1990). The SCS yields one total score, which can range from -108 to +108 with a mean score of +25 and a standard deviation of 20. Scores are determined by adding the values of each response. For items 4,6,8,9,14,16,18,19,21,29, and 35, the responses are reverse scored such that if a subject circled item 4, -3 the reverse score would be +3. A copy of the Self-Control Schedule is attached as Appendix D.

The **College Adjustment Scales (CAS)** (Anton, W.A., Reed, J.R., 1991) is an instrument designed to assess the experience and expression of adjustment in college students throughout the college years. This instrument consists of 108 items and assesses several areas thought to be expressive of college adjustment (Anton & Reed, 1991). The

CAS contains nine scales, including Anxiety, Depression, Suicidal Ideation, Substance Abuse, Self-esteem Problems, Interpersonal Problems, Family Problems, Academic Problems, and Career Problems. Only the questions associated with the Academic Problems scale (questions 1,10,19, 26, 37, 46, 55, 64, 73, 82, 91, and 100) were administered. The Academic Problems Scale measures the extent to which the student experiences difficulties related to academic performance. Students with high scores on this scale are likely to suffer from poor study skills, inefficient use of time, and poor concentration ability. Test anxiety may also be a prominent problem for these students. The Academic Problem Scale has a correlation of -.53 with GPA, and a correlation of .52 with the State-Trait Anxiety Scale. The Academic Problem Scale is highly correlated with the Beck Depression Inventory ($r=.66$), and has a strong correlation ($r=.67$) to the Conscientiousness Scale of the NEO-Personality Inventory. An example of the type of questions asked on the Academic Problems Scale is as follows: "As much as I try, I'm always behind in my schoolwork." The participant is asked to choose from four possible responses: "F" if the statement is FALSE or NOT AT ALL TRUE, "S" if the statement is SLIGHTLY TRUE, "M" if the statement is MAINLY TRUE, and "V" if the statement is VERY TRUE. A copy of the Academic Problem Scale of the College Adjustment Scales is attached as Appendix F.

The **Trauma Symptom Inventory (TSI)** (Briere, J. 1995) is an instrument used to determine whether the participant has experienced symptoms of PTSD during the last six months. The instrument consists of 100 items which describe various symptoms (e.g. "Suddenly remembering something upsetting from your past") and assesses post-traumatic

stress and other sequelae of traumatic events. For each item, the participant is asked to rate how frequently each symptom has been experienced during the last six months on a Likert-type scale which ranges from 0- Never, to 3 - Often.

The TSI contains three validity scales and ten clinical scales. The clinical scales include Anxious/Arousal which measures symptoms of anxiety, especially those associated with post-traumatic hyperarousal (e.g. "Irritability"); Depression which measures depressive symptomatology, in terms of both mood state (e.g. "Sadness") and depressive cognitive distortions (e.g., "Feeling hopeless"); Anger/Irritability, which measures self-reported anger or irritable affect, as well as associated angry cognitions and behavior (e.g. "Starting arguments or picking fights to get your anger out"); Intrusive Experiences, which measures intrusive symptoms associated with post-traumatic stress, such as flashbacks, nightmares, and intrusive thoughts (e.g. "Frightening or upsetting thoughts popping into your mind"); Defensive Avoidance, which measures post-traumatic avoidance, both cognitive (e.g. "Pushing painful memories out of your mind") and behavioral (e.g. "Staying away from certain people or places because they reminded you of something"); Dissociation, which measures dissociative symptomatology, such as depersonalization, derealization, out of body experiences, and numbing (e.g. "Feeling like you were watching yourself from far away"); Sexual Concerns, which measures self-reported sexual distress, such as sexual dissatisfaction, sexual dysfunction, and unwanted sexual thoughts or feelings (e.g. "Wishing you didn't have any sexual feelings"); Dysfunctional Sexual Behavior, which measures sexual behavior that is, in some way, dysfunctional either because of its indiscriminate quality, its potential for self-harm, or its

inappropriate use to accomplish non-sexual goals (e.g. "Having sex that had to be kept secret from other people"); Impaired Self-reference, which measures problems in the "self" domain, such as identity confusion, self-other disturbance and a relative lack of self-support (e.g."Getting confused about what you thought or believed"); and finally, Tension Reduction Behavior, which measures the respondent's tendency to turn to external methods of reducing internal tension or distress, such as self-mutilation, angry outbursts, manipulative behavior, and suicide threats (e.g. "Threatening or attempting suicide").

The TSI Professional Manual (Briere, 1995) reports that the ten clinical scales are internally consistent (mean alpha coefficients = .86, .87, .84, and .85 in standardization, clinical, university, and military samples, respectively), and that they exhibit reasonable convergent, predictive, and incremental validity, having predicted PTSD status (as measured by other instruments) in over 90% of the cases in a standardization subsample (n=449). Similarly, the TSI Manual reports that in a psychiatric inpatient sample, the TSI scales identified 89% of those independently diagnosed with Borderline Personality Disorder.

Raw scores for each scale on the TSI are converted to T scores, where a T score of 65 or above is considered clinically significant. Participants who score at 65 or above in either of two combinations of the clinical scales are classified as having PTSD. These combinations are 1) Sexual Concerns and either Disassociation, Anxious Arousal, or Intrusive Experiences, which are often present as a sexual posttraumatic stress response; and 2) Intrusive Experiences and either Disassociation or Defensive Avoidance, or both,

which is reported in the manual as the classic posttraumatic presentation. A copy of the Trauma Symptom Inventory is attached as Appendix E.

Procedure

Application was made to the Chairperson of the Human Subjects Committee for permission to solicit participation in this study from student volunteers from the Introductory Psychology classes. Once permission was obtained, sign-up sheets and a copy of the Informed Consent/Transcript Release Form were posted in the 5th floor lobby of Derring Hall where requests for student research participants are posted. The sign-up sheets announced the title of the study and the location and times for the group administrations. The Informed Consent/Release of Transcript Data sheet provides the following information about the present study: the purpose of the study, procedures, the level of anonymity involved, potential risks and benefits, anticipated length of time required of each participant, compensation for participation (two research credits), a statement regarding a participant's freedom to withdraw from the study at any time, and what would be expected of the participant (i.e. to respond to questions on questionnaires and return them to the researcher). A copy of the Informed Consent/Release of Transcript Data Sheet is attached as Appendix A. Potential participants were instructed to write their names and email addresses on the sign-up sheet corresponding to the research participation session they planned to attend.

Data collection took place on a single afternoon and evening. There were two group research participation sessions. In the first session, 120 participants attended. In the second session, 112 participants attended. At the beginning of each of the two group

research participation sessions, the researcher gave participants an Assessment Package containing one copy of the Informed Consent/Release of Transcript Information sheet, the Participant Demographic Data/Score Sheet, the SCS, the TSI, and the Life Events Inventory. Participants were also given two OP-SCAN forms to complete for the purpose of obtaining experimental participation credit. Additionally, participants were each given a copy of the Informed Consent/Release of Transcript Data sheet for their records.

Participants were verbally instructed by the researcher to read the Informed Consent/Release of Transcript Information Sheet that was included in the Assessment Package. After reading this document, participants were instructed to ask any questions they might have regarding participation in the study, the use of the data, or how that data will be stored. Participants were reminded that this form would be removed from the Assessment Package after the transcript data had been obtained and included on Participant Demographic Data/Score Sheet, and that from that point on, all information would be identifiable only by a number which would be assigned after the identifying information had been removed. Next, participants were asked to provide their name in print, their signature, and their social security number in the space on second page of the Informed Consent/Release of Transcript Information Sheet designated for that purpose. Participants were then verbally instructed on the proper method for completing the OP-SCAN forms. After completing the Consent/Release form, and both OP-SCAN forms, participants were asked to complete the Assessment Package at their own pace and according to the written instructions provided for each instrument. After completing the Assessment Package, participants were instructed to return the Assessment Package and

the two OP-SCAN forms to the researcher when complete, and to retain the additional copy of the Informed Consent/Release of Transcript sheet for their records.

At the time the Assessment Package and OP-SCAN forms were returned to the researcher (just prior to leaving the testing room), a written Debriefing Statement describing the mental health services available on campus was given to each participant. A copy of the Debriefing Statement is attached as Appendix G. The duration of time to complete the Assessment Package ranged from 40 minutes to one hour and ten minutes, with the mean time being approximately 55 minutes. Since it was necessary to retain the ability to match transcript information with the appropriate Participant Demographic Data/Score Sheet for each participant, the signed Consent Form was left attached to the Assessment Battery until after the transcript data was retrieved via computer. At that point, all identifying information was detached from the Assessment Battery, and each Assessment Battery was given a number.

CHAPTER IV RESULTS

The descriptive data on all variables of interest, the characteristics of each group, the results of preliminary analyses, and the results of the analyses used to test the hypotheses and to examine the research questions of interest in this study will be discussed in this chapter. Where relevant, the critical value for alpha was .05. The descriptive data, results of preliminary analyses, and the research questions will be addressed first.

Descriptive Data on All Major Variables

Table 4.1 presents the means for the current sample and the norms (where applicable) for the major variables in this study.

Table 4.1

Sample and Norm Mean Scores and Standard Deviations of Major Variables in this Study

	Sample Mean (SD)	Norm Mean (SD)
Overall GPA	2.76 (0.61)	NA
Most Recent Term GPA	2.86 (0.68)	NA
APS	50.59 (9.84)	50 (10)
SCS	23.77 (24.54)	25 (20)

Notes: APS = Academic Problems Scale of the College Adjustment Scales
SCS = Self-Control Schedule
NA= Not Applicable

Descriptive Characteristics of Participant Groups Based on Level of Trauma Experience

Participants were separated into three groups based on the level of trauma experienced. Three groups were formed based on participants' responses to the Life Events Inventory (LEI) and the Trauma Symptom Inventory (TSI). Group I (Level I, n=35)) consisted of participants who reported never having experienced a single traumatic event listed on the Life Events Inventory . Group II (Level II, n=144) consisted of participants who reported having experienced one or more traumatic events, but who did not meet criteria for PTSD according to their scores on the TSI. Group III (Level III, n=37) consisted of participants who had reported experiencing at least one traumatic event and also scored at T=65 or above in either of two combinations of the clinical scales on the Trauma Symptom Inventory. Recall that raw scores for each scale on the TSI are converted to T scores, where a T score of 65 or above is considered clinically significant, according to the TSI manual. Participants who score at 65 or above in either of two combinations of the clinical scales are classified as having PTSD. These combinations are:

(1.) Sexual Concerns and either Disassociation, Anxious Arousal, or Intrusive Experiences, which is often present as a sexual posttraumatic stress response; and 2.) Intrusive Experiences and either Disassociation or Defensive Avoidance, or both, which is reported in the manual as the classic posttraumatic presentation. Group III was identified as the PTSD group.

The demographic and trauma related characteristics of each group are presented in Table 4.2 which is found on page 52.

Preliminary Analyses

Due to nonrandom group assignment, chi-square analyses were used to determine whether or not the three groups differed with respect to Race, Gender, and College Classification. Significant differences in either of these variables would suggest that either or all of these variables should be controlled for in the analyses used to test the hypotheses. The chi-square for Group by Race proved to be non significant ($df=10$, $\chi^2=14.814$, $p=.139$). The chi-square for Group by Gender also proved to be non-significant ($df=2$, $\chi^2=.863$, $p=.649$). The chi-square for Group by Classification proved to be non-significant ($df=8$, $\chi^2=9.26$, $p=.32$) as well, indicating that the three groups did not differ significantly with respect to the three investigated demographic variables.

A t-test to compare the mean APS scores of males and females was used to determine whether or not gender should be included as a controlled factor in the analysis to test the hypotheses. Significant differences were found in mean APS scores in association with gender ($t=2.2$, $df=102.27$, $p=.03$). Males scored an average APS score of 53, while females scored a significantly lower average APS score of 49.60. Therefore, the use of gender as a controlled factor in the testing of the hypotheses was indicated. The mean Academic Problem Scale scores by gender are presented in Table 4.3.

Table 4.2

Characteristics of Groups Based on Level of Trauma Experienced

	Group I (No Trauma) n=35		Group II Trauma/No PTSD) n=144		Group III (PTSD) n=37	
	Mean	SD	Mean	SD	Mean	SD
<u>Demographic</u>						
Age	19.37	1.61	19.15	1.89	18.97	1.01
<u>Traumatic Events</u>						
Total Traumatic Events	---		2.72		3.70	
Reported Mean Number of Specific Events						
Natural Disasters	---		.72		.92	
Sexual Assault/Abuse	---		.68		1.19	
Physical Injury/Abuse/Assault	---		.69		.78	
Witnessing Others						
Injured/Killed	---		.28		.35	
Other Stressful Events	---		.32		.46	

Table 4.3

Mean Academic Problem Scale Score by Gender

Gender	Mean	SD	n
Males	53	10.72	63
Females	49.60	9.30	153

Two ANOVAs were used to determine if there were trauma level group differences in 1) the reported age at which the most recent traumatic event experienced occurred, and 2) the distance in years from the most recent traumatic event for each level of trauma.

Finding significant trauma level group differences in either the mean reported age at which the most recent traumatic event experienced occurred, or in the mean distance in years from the most recent traumatic event would indicate the use of either or both of these variables as covariates in the analyses used to test the hypotheses.

In each ANOVA, the independent variable was trauma level group (i.e. Group I, Group II, or Group III). In the first ANOVA, the dependent variable was the reported age at which the most recent traumatic event experienced occurred. Although the model was significant due to the inclusion of Group I (No trauma) ($F(2,213)=241.40$, $p=.00$), Tukey's HSD found no significant differences between Group II (Trauma, no PTSD) and Group III (PTSD).

In the second ANOVA, the dependent variable was the reported distance in years from the most traumatic event. Again, although the model was significant due to the inclusion of Group I (No trauma) ($F(2,205)=752.76$, $p=.00$), Tukey's HSD found no significant differences in this variable between Group II (Trauma, no PTSD) and Group III (PTSD). Therefore, there was no evidence that age at the time of the most recent trauma or number of years since this trauma need to be included as covariates in the analyses used to test the hypotheses. The time frame for having experienced traumatic events by level of trauma is presented in Table 4.4.

Table 4.4

Time Frame in Years for Having Experienced Traumatic Events by Level of Trauma in Years

	No Trauma (Group I)	Trauma/No PTSD (Group II)	PTSD (Group III)
Age of Most Recent Traumatic Event	---	16.65	16.54
Distance in Years from Most Recent Traumatic Event	---	1.80	1.49

Results of the Analyses to Answer the Research Questions

Research question 1 asked about the prevalence of 1) having experienced traumatic events and 2) of meeting the criteria for PTSD in a sample of nonclinical college students. This question was considered important because only two studies (Vrana and Lauterbach 1994; Segal & Figley, 1988) have reported prevalence rates for having experienced traumatic events among nonclinical college students, and neither study examined the prevalence rate for PTSD in nonclinical college students.

Based on participant responses to the Life Events Inventory, only 16.2% of the sample in the present study reported that they had NEVER experienced a single traumatic event during their lifetimes. The remaining 83.8% reported that sometime during their lives they had experienced AT LEAST ONE event classified as traumatic. Of those reporting having experienced at least one traumatic event sometime during their lives, about half reported having experienced either *at least one* (24.9%) or *at least two* (24.9%) traumatic events. Another 21.5% reported having experienced *at least three* traumatic

events, with the remaining 28.7% reporting having experienced anywhere from *at least four* to *at least eight* traumatic events. The mean number of traumatic experiences reported was 2.92 traumatic events. The number of traumatic events reported by participants experiencing at least one traumatic event sometime during their lives is presented in Table 4.5.

Natural disasters and accidents were reported as having been experienced by about one quarter (24%) of the total sample. Also frequently reported were sexual assault or abuse (43.5% of the sample), and physical injury, assault, or abuse (39.4% of the sample). About 28% of the total sample reported having experienced traumatic events classified as "Other". These "other" events included the death of a parent, relative, close friend, or pet, divorce of parents, accidents involving hitting animals while driving, and being followed by strangers. Additionally, 25% of the total sample reported having witnessed someone else being injured or killed. Specific traumatic events reported having been experienced by participants in the sample are presented in Table 4.6

Participants who scored $T=65$ or above in either of two combinations of the clinical scales on the Trauma Symptom Inventory (TSI) and who also reported having experienced at least one traumatic event sometime during their lives were included in the PTSD group. The combinations of scales required for receiving a PTSD classification are:

(1.) Sexual Concerns and either Disassociation, Anxious Arousal, or Intrusive Experiences and 2.) Intrusive Experiences and either Disassociation or Defensive

Table 4.5

Number of Traumatic Events Reported by Participants Experiencing At Least One Traumatic Event Sometime During Their Lives

# of Events Reported	Frequency	Percent	Cum Percent
1	45	24.9	24.9
2	45	24.9	49.7
3	39	21.5	71.3
4	20	11.0	82.3
5	10	5.5	87.8
6	11	6.1	93.9
7	7	3.9	97.8
8	4	<u>2.2</u>	100.0
		100.0	

Note: Mean=2.92 (SD=1.98) n=181

Table 4.6

Traumatic Events Reported Having Been Experienced by Participants in the Sample

Traumatic Event	% of Sample	n
Natural Disasters or Accidents	24	52
Sexual Assault or Abuse	43.5	94
Physical Injury, Assault, or Abuse	39.4	85
Other Traumatic Events	28	60
Witnessing Other Injured/Killed	25	54

Avoidance, or both. In the sample used for the present study, 17.1% (n=37) met the criteria for PTSD. Of this group, 24.3% were male, and 75.7% were female.

Research question 2 asked whether in a non-clinical college sample there were significant gender differences in the prevalence rates for having experienced traumatic events in general and in the specific types of traumatic events experienced. In order to answer the first part of this question, a comparison was made between the mean total

number of traumatic events reported by both males and females who reported experiencing at least one traumatic event. Since preliminary analyses found that the distributions for the mean total number of traumatic events for both males and females were skewed in the positive direction, the assumption of normality required to use a t-test was not met. Therefore, a Mann-Whitney U test was used to compare the average number of events reported for each gender. There were no significant gender differences ($p=.2053$) in the mean total number of traumatic events reported having been experienced by males (mean = 3.16 traumatic events) and females (mean = 2.83 traumatic events).

To answer the second part of research question 2, comparisons were made between the mean numbers of the specific types of traumatic events reported by both males and females who reported experiencing at least one traumatic event. Preliminary examination of the distributions of the responses for each type of traumatic event showed that generally, responses tended to bunch around "0" experiences of the specific type of traumatic event, or "1" experience of the specific type of traumatic event, with some scattering at higher frequencies of experiencing a particular type of traumatic event. Therefore, the number of reported incidents of each particular type of traumatic event was treated as a categorical variable rather than a continuous variable. The Gamma statistic (ranges from -1 to 1; unlike the chi-square statistic, Gamma takes order of variables into account) was used to determine the strength of association between gender and the number of specific traumatic events reported. In other words, Gamma was used to look for tendencies for either males or females to report more incidences of each particular type

of traumatic event [i.e. whether males were more likely to report having experienced a particular event (e.g. natural disasters) than females or vice versa].

In accordance with the Gamma statistic, numerical categories were assigned to the reported number of incidents for each type of traumatic event. Categories included having experienced 1: "0" incidents, 2: "1" incident, and 3: "2 or More" incidents of each type of traumatic event. Numerical categories were also assigned to each gender. Males were assigned the value "1", and females were assigned the value "2". This meant that a negative value for gamma would indicate an association between the male gender (gender category 1) and higher numbers of reported incidents of a particular type of traumatic event (incident category 2: "1 incident" or category 3: "2 or more incidents"), and a positive value for gamma would represent an association between the female gender (gender category 2) and higher numbers of reported incidents of a particular type of traumatic event (incident category 2: "1 incident" or category 3: "2 or more incidents"). A gamma value close to 0 would mean that there was little, if any, association between gender and reported numbers of incidents for a particular type of traumatic event.

Significant associations were found between gender and reported number of incidents experienced for the following specific types of traumatic events: 1) sexual assault or abuse, 2) physical injury, assault or abuse, and 3) having witnessed others being injured or killed. In this sample, being female was moderately associated with reporting having experienced more incidents of sexual assault or abuse ($\text{gamma} = .598$, 95% CI: .3824 to .8136). On the other hand, being male was moderately associated with reporting having experienced more incidents of both physical injury, assault or abuse ($\text{gamma} = -.423$, 95% CI: -.6347 to -.2113) and with incidents of having witnessed others being injured or killed

($\gamma = -.330$, 95% CI: $-.6083$ to $.0517$). There were no significant gender associations with having experienced natural disasters or accidents, $\gamma = .055$, 95% CI: $-.2076$ to $.3176$, or with the tendency to report having experienced “other” stressful events, $\gamma = -.014$, 95% CI: $-.3334$ to $.3055$, which frequently included death of a parent, relative, close friend or pet, and parental divorce. The average reported number of specific traumatic events for each gender is presented in Table 4.7.

Research question 3 asked whether there were significant differences in level of learned resourcefulness in association with level of trauma experienced (i.e. trauma level group). This question is especially important because finding significant differences in learned resourcefulness in association with trauma level group would support the further examination of this variable in the analyses to test the hypotheses in this study. In order to answer this question, a One-way Analysis of Variance comparing the mean scores from the Self-Control Schedule (SCS) (the measure for learned resourcefulness) for Group I (Level 1, No trauma), Group II (Level II, Trauma/no PTSD), and Group III (Level III, PTSD) was used. In this ANOVA, the independent variable was trauma level group,

Table 4.7

Comparison of Mean Number of Specific Traumatic Events by Gender
Average Number Reported

	<u>Males</u>		<u>Females</u>		<u>Gamma</u>
	Mean	SD	Mean	SD	
Natural Disaster/Accidents	.76	.71	.76	.058	.055
Sexual Assault/Abuse	.39	.827	.94	.913	.598
Physical Assault/Abuse/Injury	1.18	.158	.53	.789	-.423
Witnessing Others Injured/Killed	.45	.503	.24	.428	-.330
Other Stressful Events	.35	.483	.35	.524	-.014

and the dependent variable was SCS scores. This ANOVA indicated significant differences in SCS scores in association with trauma level group ($F(2, 213)=6.51$; $p=.0013$, $n=216$). Tukey's HSD Multiple Comparisons demonstrated that although no significant differences were found between Group I (Level I, No trauma) and Group II (Level II, Trauma, no PTSD), Group III's (Level III, PTSD) mean SCS score was significantly lower than that of Group I (Level I, No trauma) ($p=.0323$), and Group II (Level II, Trauma, no PTSD) ($p=.0007$). The mean SCS scores for each group are presented in Table 4.8.

Table 4.8
Level of Learned Resourcefulness for Each Trauma Level Group

	Mean SCS Score	SD	n
Group I (Level I, No Trauma)	24.77	20.81	35
Group II (Level II, Trauma/No PTSD)	26.9	24.76	144
Group III (Level III, PTSD)	10.62	23.13	37
Total N=216			

Results of the Analyses Used to Test the Hypotheses

The results of the analyses used to test the hypotheses will now be discussed. The present study examined the following two hypotheses: 1) there would be differences in academic performance (as measured by the Academic Problems Scale of the College Adjustment Scales, overall GPA, and most recent term GPA) in association with level of trauma [i.e. membership in either Group I (No trauma), Group II (Trauma/no PTSD), or

Group III (PTSD)]; and 2) the relationship between level of trauma and academic performance would be mediated (influenced) by level of learned resourcefulness (as measured by the SCS).

In order to test hypothesis 1 which stated that there would be significant differences in academic performance (as measured by the Academic Problems Scale of the College Adjustment Scales (APS), overall GPA, and most recent term GPA) in association with level of trauma (i.e. membership in either Group I (No trauma), Group II (Trauma/no PTSD), or Group III (PTSD)), a Factorial Multivariate Analyses of Variance (MANOVA) was used. It was necessary to control for the effects of gender because a preliminary analysis of the APS scores found significant differences in these scores in association with gender. Two MANOVAs were performed because of (1) the need to examine two of the academic performance variables (i.e. overall GPA and most recent term GPA) in separate analyses since most recent term GPA is a component of overall GPA, and (2) the need to control for the likely shared variance between scores on the Academic Problems Scale of the College Adjustment Scales (APS scores) and both overall GPA and most recent term GPA. To accomplish the latter, APS scores were included in the model with overall GPA and in the model with most recent term GPA that were used to test the hypotheses, thus resulting in two MANOVAs.

In the first MANOVA, the independent variable was level of trauma experienced (i.e. group membership). The dependent variables were the Academic Problems Scale score from the College Adjustment Scales and overall GPA, and the effects of gender were controlled. The results of the first MANOVA showed significant effects for group

($F(4,422)=2.8$, $p=.025$). Only the univariate model for APS was significant ($F(3,212)=5.37$, $p=.0014$). Group was significant in this model ($p<.006$); however, the follow-up least squares procedure to determine where the group differences lie revealed that the group differences were not statistically significant. The mean APS scores, as well as Least Square Means, overall GPAs and most recent term GPAs for each level of trauma are presented in Table 4.9. The results of the univariate model for APS is presented in Table 4.10.

**Table 4.9
Mean Academic Problem Scale Scores, Overall, and Most Recent Term GPAs by Group**

	APS	SD	LS Means (Adj.means)	OGPA	MRTGPA	n
Group I (Level I, No trauma)	49.51	8.91	49.46	2.73	2.88	35
Group II (Level II, Trauma)	49.91	9.82	50.18	2.78	2.86	144
Group III (Level III, PTSD)	55.03	9.78	51.65	2.71	2.81	37

In the second MANOVA, the independent variable was group (level of trauma experienced), and the effects of gender were controlled for. The dependent variables were the Academic Problems Scale score from the College Adjustment Scales and most recent term GPA. The results of the second MANOVA showed significant effects for group ($F(4,422)=2.81$, $p=.025$). Only the univariate model for APS was significant. As stated earlier, although Group was significant in this model, the follow-up least squares procedure to determine where the group differences lie revealed that the group differences were not statistically significant. Thus the results of these two MANOVAs fail to provide support

for hypothesis 1. The results of the univariate model for APS are presented in Table 4.10. The mean APS scores, Least Squares Means for APS, overall GPAs and most recent term GPAs for each group are presented in Table 4.9.

Table 4.10
Results of Univariate Model for APS

Dependent Variable: APS					
Source	DF	Sum of Squares	Mean Square	F Value	Pr>
Model	3	1470.12544005	490.04181335	5.37	.0014
Error	212	19352.20326365	91.28397766		
Corrected Total		20822.32870370			
Source	DF	Type III SS	Mean Square	F Value	Pr>
GROUP	2	952.67255334	476.33627667	5.22	.0061
SEX	1	589.26256647	589.26256647	6.46	.0118

In order to test hypothesis 2 which stated that the relationship between level of trauma and academic performance would be mediated (influenced) by the level of learned resourcefulness, two Factorial MANOVAs were used. In the first MANOVA, the independent variables were group, SCS score, and group X SCS score; the dependent variables were Academic Problems Scale and overall GPA; and the effects of gender were controlled for. The results of this MANOVA showed significant effects for group, $F(4,416)=2.95$, $p=.02$, SCS, $F(2,208)=13.09$, $p=.0001$, and a significant interaction between SCS and group $F(4,426)=2.58$, $p=.04$. However, only the univariate model for APS was found to be significant [$F(6,209)=11.43$, $p=.0001$]. Although there was a

significant univariate effect for group [$F(2)=3.56, p=.03$] and for SCS [$F(1)=26, p=.0001$], the interaction between SCS and group proved non significant [$F(2)=2.14, p=.12$] in the significant univariate analysis for APS. The univariate results for APS from the MANOVA used to test hypothesis 2 are presented in Table 4.11. These results fail to provide support for hypothesis 2.

In the second MANOVA, the independent variables were group, SCS score, and group X SCS score; the dependent variables were Academic Problems Scale and most recent term GPA; and the effects of gender were controlled for. The results of this MANOVA showed significant effects for group, $F=2.97, p=.02$, SCS, $F=13.02, p=.0001$, and SCS X group, $F=2.9, p=.02$. However, only the univariate for APS was found to be significant [$F(6,209)=11.43, p=.0001$]. Although there was a significant univariate effect for group [$F(2)=3.56, p=.03$] and for SCS [$F(1)=26, p=.0001$], the interaction between SCS and group proved non significant [$F(2)=2.14, p=.12$]. The univariate results for APS from the MANOVA used to test hypothesis 2 are presented in Table 4.10. The mean APS scores, Least Squares Means for APS, overall GPAs and most recent term GPAs are presented in Table 4.9. These results also fail to support hypothesis 2.

Table 4.11

Results of Univariate Analysis for APS from MANOVAs used to test hypothesis 2

Dependent Variable: APS

Source	DF	Sum of Squares	Mean Square	F Value	Pr>
Model	6	5142.83848269	857.13974712	11.43	.0001
Error	209	15679.49022101	75.02148431		
Corrected Total		20822.32870370			
Source	DF	Type III SS	Mean Square	F Value	Pr>
GROUP	2	534.46377843	267.23188922	3.56	.03
SEX	1	357.22346823	357.22346823	4.76	.03
SCS	1	1950.64366305	1950.64366305	26.00	.0001
SCS*GROUP	2	320.42823027	160.21411514	2.14	.121

CHAPTER V

DISCUSSION

The results of preliminary analyses, the analyses used to examine the research questions, and the analyses used to test the hypotheses of interest to this study will be discussed in this chapter. Limitations of the present study will also be discussed, and some suggestions for future research will be presented. A brief summary of the findings will be presented first.

Summary of Results

The purposes of the present study were 1) to constructively replicate those portions of the Vrana and Lauterbach (1994) and the Segal and Figley (1988) studies which examined the prevalence rate in a nonclinical sample of college students for having experienced traumatic life events, 2) to extend the work of these researchers by examining the prevalence rates for meeting the criteria for Posttraumatic Stress Disorder in a nonclinical sample of college students, 3) to examine the relationship between level of trauma experienced and academic performance (as measured by the Academic Problems Scale score of the College Adjustment Scales, overall GPA, and most recent term GPA), and 4) to examine whether level of learned resourcefulness (as measured by the Self-Control Schedule) is a mediator of (an influence on) any relationship between level of trauma experienced and academic performance.

The study examined three research questions regarding 1) the prevalence rate for having experienced traumatic life events and for meeting criteria for Posttraumatic Stress Disorder (PTSD) in a nonclinical college sample, 2) gender differences in the prevalence rates for having experienced traumatic events in general, and for having experienced specific types of traumatic events, and 3) whether there were significant differences in the level of learned resourcefulness in association with the level of trauma experienced. The study tested the hypotheses that 1) there would be significant differences in academic performance (as measured by the Academic Problems Scale score of the College Adjustment Scales, overall GPA, and most recent term GPA) in association with level of trauma experienced [Group I (Level I=No Trauma), Group II (Level II=Trauma, no PTSD), Group III (Level III=PTSD)], and 2) the relationship between academic performance and level of trauma experienced would be mediated (influenced) by level of learned resourcefulness.

A preliminary examination using chi-square was performed to determine whether the groups based on level of trauma experienced (Level I=No Trauma (Group I), Level II=Trauma, no PTSD (Group II), Level III=PTSD (Group III)) differed with regard to gender, classification, or race. Results indicated that the groups did not differ significantly with respect to gender, classification, or race. Results of preliminary analyses using ANOVA's indicated that the groups did not differ significantly with respect to the age of the most recent traumatic event or the distance in years from the most recent traumatic event. Results of a t-test indicated that there were significant differences in APS in association with gender; therefore, the controlling for the effects of gender in the analyses

to test the hypotheses was warranted. (The gender difference that was found indicates that males as compared to females reported experiencing significantly more academic problems.)

Research question 1 asked about the prevalence rate in a sample of non-clinical college students of 1) having experienced traumatic events and 2) meeting criteria for PTSD. Based on participant responses to the Life Events Inventory, 16.2% of the sample reported that they had NEVER experienced a single traumatic event. The remaining 83.8% of the sample reported they had experienced at least one traumatic event at some point in their lives. Participants who scored $T= 65$ or above in either of two combinations on the clinical scales of the Trauma Symptom Inventory (TSI) and who also reported having experienced at least one traumatic event sometime during their lives were included in the PTSD group. In the sample used for the present study, 17.1% met the criteria for PTSD.

Research question 2 asked whether there were significant gender differences in the prevalence rates in a nonclinical college sample of having experienced traumatic events in general and for having experienced specific types of traumatic events. No significant differences were found for the average number of traumatic events reported in association with gender. However, being female was associated with reporting having experienced more incidents of sexual assault or abuse, and being male was associated with reporting having experienced more incidents of physical injury, assault, or abuse, and having witnessed others being injured or killed. No significant gender associations were found for 1) having experienced natural disasters or accidents, or 2) having experienced "other"

stressful events, which frequently included death of a parent, relative, close friend, or pet, and parental divorce.

Research question 3 asked whether there were significant differences in level of learned resourcefulness in association with level of trauma experienced. Significant differences were found in level of learned resourcefulness in association with level of trauma (Level I: No trauma, Level II: Trauma, no PTSD, Level III: PTSD), justifying the examination of learned resourcefulness as a possible mediating variable in the analysis to test hypothesis 2.

Hypothesis 1 stated that there would be significant differences in academic performance [as measured by the Academic Problems Scale (APS) of the College Adjustment Scales, overall GPA, and most recent term GPA] in association with level of trauma experienced. Since a preliminary analysis found significant differences in APS in association with gender, the effects of gender were controlled for in the two MANOVAs used to test this hypothesis. Significant effects were found for level of trauma group. However, only the univariate model for APS proved significant, and the follow-up test of Least Squares Means indicated that the group differences in the mean APS scores were not statistically significant. Thus hypothesis 1 was not supported.

Hypothesis 2 stated that the relationship between academic performance (as measured by APS, overall GPA, and most recent term GPA) and level of trauma experienced would be mediated (influenced) by the level of learned resourcefulness (as measured by the Self-Control Schedule). The results of two MANOVAs showed significant effects for level of trauma group, level of learned resourcefulness (SCS), and an

interaction between level of trauma group and level of learned resourcefulness. However, only the univariate model for APS proved significant. Although there were significant effects in the univariate for both group and SCS, there was no significant interaction effect for group X SCS. Thus, hypothesis 2 was not supported.

Discussion of Descriptive Data

Finding that the participants in the sample who met the criteria for PTSD reported having experienced more traumatic events on average than did those who reported having experienced at least one traumatic event but did not meet the criteria for PTSD lends support to the theory that multiple exposures to traumatic stimuli increases the risk for developing Posttraumatic symptomatology (Van der Kolk et al., 1996). It is also noteworthy that those participants who met criteria for PTSD also reported having experienced almost twice as many incidents of sexual assault than did those who had experienced at least one traumatic event but who did not meet criteria for PTSD. This finding suggests that the nature of sexual violence is such that one may be more likely to develop Posttraumatic symptomatology after a sexual assault than might be expected after having experienced other specific types of traumatic events. It is not known whether developing PTSD is causally related to 1) having experienced more traumatic incidents, 2) having experienced more incidents of sexual assault or abuse, or 3) an interaction between frequency and having experienced sexual assault or abuse. An examination of whether this causal relationship exists was beyond the scope of the present study.

Discussion of Results

With regard to the prevalence rate for having experienced at least one traumatic incident at some point during their lives, the findings of the present study (i.e. a prevalence rate of 83.5%) are almost identical to those found in the Vrana and Lauterbach study (prevalence rate of 84%). However, in the present study versus the Vrana and Lauterbach (1994) study, a much higher percentage (75%) of those participants reporting having experienced traumatic incidents, also reported having experienced two or more traumatic incidents. In the Vrana and Lauterbach (1994) study, only one third (approximately 33%) of those reporting having experienced traumatic events also reported having experienced two or more incidents. The finding in the present study regarding the prevalence rate for having experienced at least two or more traumatic incidents at some point during their lives suggests that it is becoming increasingly common to experience multiple traumatic events during the first 18 to 21 years of a person's life.

It was disturbing to find that 17.1% of the total sample met criteria for Posttraumatic Stress Disorder. This finding suggests that almost 20% of those students who reported having experienced at least one traumatic event also met the criteria for PTSD. The present findings regarding prevalence rate for PTSD are similar to those found in the Heltzer et al. (1987) study (15% for men and 16% for women overall) and slightly lower than the prevalence rate found for PTSD in the Breslau et al. (1991) study (23.6% of those reporting having been exposed to at least one traumatic event met criteria for PTSD). What is particularly noteworthy is that participants in the sample used in the present study were much younger (mean age 19.37) than the participants in the samples

used in the Heltzer et al. (1987) (the Epidemiological Catchment Area Study) and the Breslau et al. (1991) (Mean ages 21-30) studies. It could be that PTSD in older adult samples is related to traumatic experiences which occurred at a younger age. Alternately, it is possible that in future studies, the prevalence rate of PTSD in older samples will increase as young college-aged adults, most of whom have already experienced at least one traumatic event, mature and experience other traumatic events.

The findings of the present study regarding gender differences in the prevalence rate for having experienced traumatic events and for specific types of traumatic events also support the previous findings of both the Vrana and Lauterbach (1994) study, and the Boney-McCoy and Finkelhor (1995) study. Finding that females in the present study were more likely to report having experienced sexual assault or abuse than males speaks to the continuing vulnerability of young women and girls to unwanted sexual contact. That males in the present study were more likely to report having experienced physical assault, abuse, or injury than females, and that males were also more likely to have witnessed someone else being injured or killed than females also speaks to the atmosphere of aggression and violence in which young college men and boys have developed and in which they currently exist.

Finding that the mean level of learned resourcefulness (as measured by the Self-Control Schedule) was 14 to 17 points lower for those meeting the criteria for PTSD than for others in the sample appears to lend support to related findings by earlier researchers (Malcolm, 1985; Alexander, 1990; Hanson, 1993). These earlier researchers found that those with lower levels of learned resourcefulness were more vulnerable to various forms

of psychopathology than those with higher levels of learned resourcefulness. However, the present finding also raises questions. Did lower levels of learned resourcefulness cause those meeting the criteria for PTSD to be much less able to cope with the traumatic events they experienced, and hence more prone to developing PTSD, or was having experienced multiple traumatic events causally related to lower levels of learned resourcefulness in participants who may have had higher levels of learned resourcefulness prior to experiencing one or more traumatic events? Also, could lower levels of learned resourcefulness have made participants more vulnerable to falling victim to one or more traumatic events in the first place?

Since resourcefulness can be learned, the possibility exists that providing specific coping skills and self-efficacy training to youth and children, perhaps as part of the educational curricula, could be instrumental in reducing the rate of Posttraumatic Stress Disorder found in young adults, at least in the non-clinical college population. If learned resourcefulness is related to vulnerability to experiencing traumatic events, teaching coping and self-efficacy skills could also be instrumental in reducing the risk of an individual experiencing one or more traumatic events.

Another interesting question is raised by the findings in this study that participants in the sample who met criteria for PTSD both reported having experienced twice as many incidents of sexual assault or abuse and scored 14 to 17 points lower on the SCS than those who did not meet criteria for PTSD. This question is whether experiencing sexual assault or abuse is related to learned resourcefulness in some way that is significantly different from the way it is related to experiencing other types of traumatic events. In

other words, do people who are sexually assaulted or abused tend to have different levels of learned resourcefulness than do those who, for example, experience physical abuse, assault, or injury? This question suggests that there may be skills and coping mechanisms particularly useful for managing or avoiding a sexually threatening situation. If this were the case, then determining which coping skills were most effective in managing or avoiding a sexually threatening situation, and teaching those skills to young women and girls as well as young men and boys, could be instrumental in reducing the risk of an individual experiencing a sexual assault or multiple incidents of sexual abuse.

No significant relationship between academic performance (as measured by the Academic Problems Scale of the College Adjustment Scales) and level of trauma experienced was found, even after controlling for the effect of gender. Thus, hypothesis 1, which stated that there would be significant differences in academic performance (as measured by APS scores, overall GPA, and most recent term GPA) in association with the level of trauma experienced was not supported,. However, the results suggest that differences in academic performance as measured by APS scores might be found in association with level of trauma experienced using a larger sample size.

The second hypothesis, which stated that the level of learned resourcefulness would serve to mediate (influence) the relationship between level of trauma experienced and academic performance (as measured by Academic Problem Scale score, overall GPA, and most recent term GPA) was not supported. This finding suggests that the effect that having experienced traumatic events at some point in one's life has on academic

performance is not significantly influenced by the level of learned resourcefulness one possesses.

It is interesting that no significant differences in overall GPA, most recent term GPA, or Academic Problem Scales scores in association with level of trauma were found. This finding could be a function of the fact that GPA and a self-report of academic problems on the Academic Problem Scale are more subjective methods of measuring academic performance than administration of standardized achievement tests, for example. Grade Point Averages may differ according to the level of difficulty of the subject matter, the level of difficulty of one's major, the teaching style/learning style match, intelligence, or the motivation level of the student, among other things. The responses to the questions asked on the Academic Problem Scale might vary according to how socially acceptable it is to respond in the positive direction to statements such as "Other students seem to study more than I do." It is possible that other more objective and standardized methods of measuring academic performance such as administration of achievement tests or even college admissions tests such as the SAT or ACT may have resulted in different research results from those found in the present study.

Limitations of the Present Study

One of the limitations of the present study is the high proportion of female participants to male participants in the sample. Females were 71% of the sample. Although the finding of the present study regarding the association of gender with reporting having experienced certain specific types of traumatic events is similar to results reported in other studies (Vrana & Lauterbach, 1994, Boney-McCoy & Finkelhor, 1995), it is possible that

a more gender-balanced sample might have yielded different results, particularly with respect to found gender differences in sexual assault or abuse.

In addition, the sample used in the present study was predominantly Caucasian. Only 15% of the total sample was made up of participants from other racial or ethnic backgrounds. This suggests that the findings of the present study may not be applicable to nonclinical college students from other racial backgrounds. It is possible that other results may have been obtained had the sample been more racially balanced, or had the same study been undertaken with a predominantly African American, Asian, or Native American sample.

Another limitation of the present study is the fact that the participants were self-selected. Data regarding the use of volunteers suggests that volunteer groups are rarely representative of the population from which they were drawn (Borg and Gall, 1989). Volunteers tend to be higher in social-class status, more intelligent, and higher in need to achieve (Borg et al., 1989). It is also possible that since the Informed Consent form did include information regarding the fact that questions would be asked about experiences the subject may have wanted to forget, certain potential subjects may have self-selected OUT of the study in order to avoid remembering these issues. This would suggest that the findings of the present study may not be applicable to all nonclinical college students. A more randomized sample may have yielded different findings.

The fact that the instruments composing the Assessment Package were given in the same sequence to all participants is another limitation of this study. There may have been an order effect with respect to the responses such that responses to instruments given later

in the package may have been influenced by responses made earlier in the package. A randomized ordering of the instruments for each Assessment Package would have served as a control for this possible effect.

Another limitation to the present study may have been the sensitive nature of some of the questions (e.g. behaviorally specific queries regarding possible incidents of sexual assault or abuse) asked in parts of the Assessment Package. The questions may have triggered a dissociative response in participants with Posttraumatic symptomatology, causing them to answer inaccurately those questions regarding the occurrence of certain traumatic events, particularly those which may have occurred at an earlier age. If this occurred, the figures for having experienced a traumatic event might actually have been higher than reported.

The sensitive nature of the questions may have also activated a need in some participants to make themselves appear more competent than they may have been, especially with regard to academic habits (e.g. "I'm inconsistent with my class work"). Unfortunately, any investigation of an individual's past trauma experiences should probably include some questions which address specific traumatic events. However, using the Marlowe-Crown Social Desirability Scale would have provided some insight into whether participants in the present study had a tendency to present themselves in the most socially appropriate way, especially with regard to the Self-Control Schedule (Marlowe & Crowne, 1960).

Suggestions for Future Research

Given the findings of the present study that 17% of the participating college students met the criteria for Posttraumatic Stress Disorder and given the consistency of these findings with those of other studies using older samples (Heltzer et al., 1987), it appears that future research is needed to investigate whether Posttraumatic Stress Disorder (PTSD) found in older adults is related to traumatic events reported having been experienced during the first 18 to 21 years of life. There is evidence which suggests that having experienced traumatic events earlier in life is associated with an increased risk of developing Posttraumatic symptoms (Van der Kolk et al., 1994). However, further investigation of this issue is needed.

In the present study, it was not known whether developing PTSD was more strongly associated with 1) having experienced more traumatic incidents, 2) having experienced more incidents of sexual assault or abuse, or 3) an interaction between frequency of traumatic experiences and having experienced sexual assault or abuse. It is possible that these experiences may be causally related to the development of PTSD in non-clinical college students. Future research is needed to investigate this issue more closely.

Although no significant relationship was found between academic performance and level of trauma experienced, findings from the present study indicate that future research utilizing larger sample sizes and more objective measures of academic performance might find significant differences in academic performance in association with level of trauma experienced.

No significant interaction was found between learned resourcefulness and level of trauma experienced when examining the effects of those variables and their interaction on overall GPA, most recent term GPA, and scores on the Academic Problem Scale of the College Adjustment Scales. This finding suggests that any relationship between level of trauma and academic performance (as measured by GPA and APS scores) was not significantly influenced by learned resourcefulness, as hypothesized. However, future research similar to the present study might wish to investigate more objective measures of academic performance than GPA (e.g. ACT or SAT scores).

Several possibilities exist for further investigation of the relationship between learned resourcefulness and level of trauma. Recall that participants meeting the criteria for PTSD were found to have lower levels of learned resourcefulness than participants who did not meet criteria for PTSD. This finding leads to a type of "which came first?" question. Were those meeting the criteria for PTSD much less able to cope with the traumatic events they experienced, and hence more likely to develop PTSD? Or were multiple experiences of traumatic events associated with a lowering of levels of learned resourcefulness in participants who may have had higher levels of learned resourcefulness before experiencing one or more traumatic events? Another question worthy of future research involves investigating whether or not lower levels of learned resourcefulness makes one more vulnerable to falling victim to traumatic events in the first place. It may be that certain learned skills make one less likely to find oneself in harm's way. If this is true, then the efficacy of offering training in certain skill domains relevant to various types of traumatic events is supported.

Future research to replicate the present study using both more ethnically diverse samples and samples drawn predominantly or exclusively from African American, Asian, or Native American college populations is recommended. Since the possibility exists that members of different ethnic groups may experience differing rates of traumatic life events, it would be interesting to investigate whether findings similar to those of the present study would result if these groups were studied independently.

CHAPTER VI CONCLUSIONS

Approximately 84% of the students in this sample reported having experienced at least one traumatic event. These findings are consistent with those of Vrana and Lauterbach (1994). However, in contrast to the Vrana and Lauterbach (1994) study, the present study found that of those reporting having experienced at least one traumatic event, a much higher percentage of students reported having experienced more than one traumatic event. Apparently, it is becoming increasingly common over the past four years to experience multiple traumatic life events during the first 18 to 21 years of a person's life. The finding that a much higher percentage of students reported having experienced more than one traumatic event than in the Vrana and Lauterbach (1994) study four years ago, suggests that investigating and dealing with the effects of trauma in the lives of young people is essential.

It has been widely accepted that trauma has a variety of psychological effects including depression, anxiety, phobias, and PTSD among others. Since findings of the present study suggest an increasing prevalence rate of having experienced traumatic life events prior to or during college, it is likely that more young people will experience the psychological effects of trauma, and that psychologists, especially those in college and

university counseling centers, will be faced with more pathology in young people than ever before.

It is possible that as more of the young people who have experienced traumatic life events reach maturity and have children of their own, especially those who have experienced interpersonal violence or abuse, we may find the cycle of violence and trauma repeated or even escalated, thus creating an increasing need for psychologists to be prepared to cope with traumatized young people.

There were three findings specifically related to the prevalence rate for PTSD in the present study. First, approximately 17% of the sample in the present study met the criteria for PTSD. Secondly, the participants meeting the criteria for PTSD reported having experienced one more traumatic event on average, than did those who had experienced at least one traumatic event, but who did not meet criteria for PTSD. Thirdly, the participants meeting the criteria for PTSD also reported having experienced almost twice as many incidents of sexual assault as did those who had experienced at least one traumatic event, but who did not meet criteria for PTSD. These three findings indicate that it is important that college and university counseling center staff be better trained to recognize symptoms of PTSD, and to address PTSD in therapy. It is also important that staff be prepared to include assessment of traumatic incidents (particularly sexual assault or abuse) and Posttraumatic symptomatology as a regular part of the intake process, since, by and large, one cannot see what one is not looking for.

Another important finding was that the average level of learned resourcefulness was 14 to 17 points lower for those participants meeting criteria for PTSD than for others.

This finding is consistent with the findings of earlier studies (Rosenbaum and Palmon, 1989; Lewisohn and Alexander, 1990; Hanson, 1993) that higher levels of learned resourcefulness were associated with decreased risk for developing psychopathology, and that those with lower levels of learned resourcefulness were more likely to develop psychopathology. These findings suggest that teaching relevant coping skills to young college-aged adults and even to high school age youth and children, will go a long way toward combating the development of psychopathology in young people. Young women and girls in particular may benefit from coping skills training specific to sexual assault and abuse, and young men and boys in particular may benefit from coping skills training specific to physical violence.

Hypothesis 1 which stated that there would be significant differences in academic performance [as measured by the Academic Problems Scale of the College Assessment Scales (APS), overall GPA, and most recent term GPA] in association with level of trauma experienced was not supported. Hypothesis 2 which stated that learned resourcefulness would mediate (influence) the relationship between level of trauma experienced and academic performance (as measured by APS, overall GPA, and most recent term GPA) also was not supported.

The found relationship between learned resourcefulness and level of trauma may indicate that persons with lower levels of learned resourcefulness are more likely to fall victim to multiple traumatic experiences, and that both variables, independently of the other, are responsible for variations in ability to cope with the requirements of academic life such as time management, study skills, and help-seeking behavior.

The importance of this study is threefold: First, the prevalence rates for having experienced traumatic events in a nonclinical college sample found in the Vrana and Lauterbach (1994) study were supported, and the prevalence rates for Posttraumatic Stress Disorder in a nonclinical college sample were also reported. Secondly, the relationship between learned resourcefulness and the level of trauma experienced was reported for the first time. Thirdly, academic performance, level of trauma experienced, and learned resourcefulness were studied together, for the first time. However, the findings of this study were relative to a predominantly Caucasian, female sample of students, and therefore, may not be applicable to other ethnic groups or to men. Future research should investigate whether similar findings would be obtained for predominantly African American samples, and for more gender balanced or predominantly male samples.

APPENDIX A
INFORMED CONSENT/RELEASE OF TRANSCRIPT FORM

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants of Investigative Projects

Title of Project: Life Events Study

Investigators: Diedra Hayman, M.A., University Counseling Center 231-6557
Carolyn Tucker, Ph.D, University of Florida, 352-392-0601

I. The Purpose of this Research

You are being asked to participate in a study investigating the relationship between certain life events and academic progress. This study is being conducted by Diedra Hayman, a doctoral student in the Counseling Psychology Program at the University of Florida (UF). She is currently interning at the University Counseling Center here at VT. The research is being supervised by Dr. Carolyn Tucker, a UF Distinguished Alumni Professor holding joint appointments with the Department of Psychology and the Department of Pediatrics in the College of Medicine. The study will involve approximately 200 to 250 participants.

II. Procedures

Your participation will involve responding to several questionnaires requesting demographic information and information regarding your life experiences and the way you view your thinking and behavior. This process should take no more than one and one half hours of your time. As part of this study, we will also access your transcript information. This will include both your overall and most recent term GPA.

III. Risks

For some people, the questions we may ask may feel a little uncomfortable because some of them are of a very personal nature, and others may call to mind experiences you may have wanted to forget. Though it would be most helpful to have answers to each question, you do not have to answer any question you do not wish to answer. There are no additional risks anticipated.

IV. Benefits of this Research

The results obtained from this study will add to the currently slim body of knowledge regarding college students and certain life events, and how they relate to academic progress. No promise or guarantee of benefits have been made to encourage you to participate.

V. Extent of Anonymity and Confidentiality

Your responses and transcript information will remain confidential to the extent provided by law, and a code number, rather than your name will be assigned to those responses to further ensure privacy. Necessary transcript information will be transferred from your transcript to the Subject Demographic Data/Score Sheet, where it will be identifiable only by the assigned code number. We will then destroy the original transcripts (by shredding). This consent form will be stored in a locked file at the Psychology Building at UF.

VI. Compensation

For each hour of your time, you will receive 1 experimental credit toward your PSY 2004 extra credit option, as specified by the Psychology Department.

VII. Freedom to Withdraw

You may withdraw your consent and discontinue participation in this study at any time.

VIII. Approval of Research

This research project has been approved, as required, by the Institutional Review Board for Research Involving Human Subjects at the University of Florida (UF) and the Virginia Polytechnic Institute and State University (VPISU), and by the UF and VPISU Departments of Psychology.

IX. Subject's Responsibility

I voluntarily agree to participate in this study. My responsibilities are to respond to the questions on the questionnaire and return the packet to the investigator.

X. Subject's Permission

I have read and understand the Informed Consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project.

If I participate, I may withdraw without penalty. I agree to abide by the rules of this project. I also agree to allow the Registrar of the Virginia Polytechnic Institute and State University to release my transcript information to Diedra Hayman, M.A., for the purposes of this study. I understand that it will only be used for this study, and that it will be destroyed when the necessary information has been obtained.

Full Name (Please Print): _____

Signature: _____

Social Security Number (necessary for transcript release): _____

Should I have any questions about this research or its conduct, I may contact:

Diedra Hayman, MA, Investigator: 231-6557

Robert Miller, Ph.D., Local Faculty Advisor: 231-6557

H.T. "Tom" Hurd, Chair, IRB, Research Division: 1-5281

APPENDIX B
PARTICIPANT DEMOGRAPHIC DATA/SCORE SHEET

Participant Demographic Data/Score Sheet

Participant # _____

Life Events Study

Researchers: Diedra Hayman, M.A., Carolyn Tucker, Ph.D.

Please circle the appropriate response:

SEX: 1 Male
 2 Female

RACE: 1 African American
 2 Asian American
 3 Caucasian
 4 Hispanic/Latino/Latina
 5 Native American
 6 International Student: Specify: _____
 7 Other: Specify: _____

Please provide the following information:

AGE: _____

CLASSIFICATION: _____

Are you currently receiving counseling from a mental health counselor, psychologist, social worker, or psychiatrist for any reason? 1 Yes 2 No

If you answered yes, briefly tell us why (i.e. depression, anxiety, death of relative, etc.)

*****Do Not Write Below This Line*****

Life Events: _____

TSI scores:

AA: ____ ATR: ____

S.C. Schedule: _____

D: ____ RL: ____

Overall GPA: _____

AI: ____ INC: ____

IE: ____

DA: ____

Most Recent Term GPA: _____

DIS: ____

SC: ____

Academic Problems Score: _____

DSB: ____

ISR: ____

TRB: ____

Thank you for your responses!

APPENDIX C
LIFE EVENTS QUESTIONNAIRE

Subject # _____
Score _____

Life Events

We would like to ask you about events that may be extraordinarily stressful or disturbing - things that may not happen often but when they do they can be frightening, upsetting, or distressing to almost everyone. During your life, have any of the following types of things happened to you?

For each "yes" answer in column I, please tell us (II) how old you were when this happened the first or only time, (III) how old you were when this happened most recently, and (IV) whether you thought you might be killed or seriously injured during this/these events.

	II.	III.	IV.	
	This Has Happened	Age First Or Only	Age Most Recently	Thought You Might Be Killed/Injured
	No	Yes		No Yes
1. A serious accident at work, in a car, or somewhere.	0	1	_____	_____
2. A natural disaster such as a tornado, hurricane, flood, major earthquake, or similar natural disaster.	0	1	_____	_____

Now we would like to ask you some personal questions. You do not have to answer a question if you do not desire to, however, should you choose to, your answers will be held in strict confidence. Your answers will only be identified by your subject number. Aside from the particular events we have already asked about, sometimes people have experienced other incidents in their lives that include unwanted sexual advances. People do not always report such experiences to the police or discuss them with family or friends. The person making the advances isn't always a stranger but can be a friend, date, or even a family member. Such experiences can occur anytime in a person's life - even as a child. Regardless of how long ago it happened or who made the advances...

3a. Before you reached the age of 13, did you ever have sexual contact with anyone who was at least five years older than you? When we say sexual contact, we mean any type of sexual contact between you and someone else (including kissing, fondling, touching or penetration). 0 1 _____ _____ 0 1

3b. Before you were age 18, has anyone ever used pressure, coercion, or non-physical threats to have sexual contact with you? Again, by sexual contact, we mean any type of sexual contact between you and someone else (including kissing, fondling, touching or penetration). 0 1 _____ _____ 0 1

3c. Since you were age 18, has anyone ever used pressure, coercion, or non-physical threats to have sexual contact with you? Again, by sexual contact, we mean any type of sexual contact between you and someone else (including kissing, fondling, touching or penetration). 0 1 _____ _____ 0 1

Life Events, Page 2

	No	Yes	I. This Has Happened	II. Age First Or Only	III. Age Most Recently	IV. Thought You Might Be Killed/Injured	No	Yes
3d. At any other time in your life, have you experienced a situation in which someone used physical force or the threat of force to make you have some type of unwanted sexual contact?	0	1	_____	_____	_____	_____	0	1
3e. If you answered yes to 3a, 3b, 3c, or 3d, did this incident (any of these incidents) include any type of forced, unwanted penetration (vaginal, oral, or anal) either by an assailant's penis, fingers, tongue, or some other object?	0	1	_____	_____	_____	_____	0	1
4. Has anyone, including family members or friends, ever attacked you with a gun, knife, or some other weapon, regardless of when it happened or whether you ever reported it or not?	0	1	_____	_____	_____	_____	0	1
5. Has anyone, including family members or friends, ever attacked you without a weapon, but with the intent to kill or seriously injure you?	0	1	_____	_____	_____	_____	0	1
6. Has a parent, or someone who was in charge of you (i.e. babysitter, relative, etc.) when you were a child (under the age of 18) ever hit, slapped, shoved, kicked, burned, or punched you in a way that left a mark or bruise or led you to miss school or go to a doctor?	0	1	_____	_____	_____	_____	0	1
7. Since you were 18, has ANYONE - including family or boyfriend/girlfriend/partner, spouse - ever hit, kicked, shoved, slapped, burned, punched, or thrown objects at you?	0	1	_____	_____	_____	_____	0	1
8. Has there been any other situation in which you suffered physical injury? If so, please specify.	0	1	_____	_____	_____	_____	0	1
9. Has there been any other situation in which you feared you might be killed or seriously injured? If so, please specify.	0	1	_____	_____	_____	_____	0	1
10. Have you ever seen someone seriously injured or violently killed?	0	1	_____	_____	_____	_____	0	1
11. Have you experienced any other extraordinarily stressful situation or event? If so, please specify.	0	1	_____	_____	_____	_____	0	1

APPENDIX D
SELF-CONTROL SCHEDULE

S.C. Schedule Subject # _____
Life Events Study

Researchers: Diedra Hayman, M.A. and Carolyn Tucker, Ph.D. Score: _____

INSTRUCTIONS: This questionnaire is designed to find out how different people view their thinking and their behavior. A statement may range from very characteristic of you to very uncharacteristic of you. There are no right or wrong answers. We simply want to know how you feel each statement applies to you. Please answer every item, and circle only one answer for each item. Use the following code to indicate whether a statement describes your thinking or behavior:

- 3 very uncharacteristic of me, extremely undescriptive
- 2 rather uncharacteristic of me, quite undescriptive
- 1 somewhat uncharacteristic of me, slightly undescriptive
- +1 somewhat characteristic of me, slightly descriptive
- +2 rather characteristic of me, quite descriptive
- +3 very characteristic of me, extremely descriptive

1. When I do a boring job, I think about the less boring parts of the job and about the reward I will receive when I finish.

-3 -2 -1 +1 +2 +3

2. When I have to do something that makes me anxious, I try to visualize how I will overcome my anxiety while doing it.

-3 -2 -1 +1 +2 +3

3. By changing my way of thinking, I am often able to change my feelings about almost anything.

-3 -2 -1 +1 +2 +3

4. I often find it difficult to overcome my feelings of nervousness and tension without outside help.

-3 -2 -1 +1 +2 +3

5. When I am feeling depressed, I try to think about pleasant events.

-3 -2 -1 +1 +2 +3

6. I cannot help thinking about mistakes I made.

-3 -2 -1 +1 +2 +3

7. When I am faced with a difficult problem, I try to approach it in a systematic way.

-3 -2 -1 +1 +2 +3

8. I usually do what I'm supposed to do more quickly when someone is pressuring me.

-3 -2 -1 +1 +2 +3

9. When I am faced with a difficult decision, I prefer to postpone it even if I have all the facts.

-3 -2 -1 +1 +2 +3

10. When I have difficulty concentrating on my reading, I look for ways to increase my concentration.
-3 -2 -I +1 +2 +3
11. When I plan to work, I remove everything that is not relevant to my work.
-3 -2 -I +1 +2 +3
12. When I try to get rid of a bad habit, I first try to find out all the reasons why I have the habit.
-3 -2 -I +1 +2 +3
13. When an unpleasant thought is bothering me, I try to think about something pleasant.
-3 -2 -I +1 +2 +3
14. If I smoked two packs of cigarettes a day, I would need outside help to stop smoking.
-3 -2 -I +1 +2 +3
15. When I feel down, I try to act cheerful so that my mood will change.
-3 -2 -I +1 +2 +3
16. If I carried the pills with me, I would take a tranquilizer whenever I felt tense and nervous.
-3 -2 -I +1 +2 +3
17. When I am depressed, I try to keep myself busy with things I like.
-3 -2 -I +1 +2 +3
18. I tend to postpone unpleasant tasks, even if I could perform them immediately.
-3 -2 -I +1 +2 +3
19. I need outside help to get rid of some of my bad habits.
-3 -2 -I +1 +2 +3
20. When I find it difficult to settle down and do a task, I look for ways to help me settle down.
-3 -2 -I +1 +2 +3
21. Although it makes me feel bad, I cannot help thinking about all sorts of possible catastrophes.
-3 -2 -I +1 +2 +3
22. I prefer to finish a job that I have to do before I start doing things I really like.
-3 -2 -I +1 +2 +3
23. When I feel physical pain, I try not to think about it.
-3 -2 -I +1 +2 +3
24. My self-esteem increases when I am able to overcome a bad habit.
-3 -2 -I +1 +2 +3

25. To overcome bad feelings that accompany failure, I often tell myself that it is not catastrophic and I can do something about it.
-3 -2 -1 +1 +2 +3
26. When I feel that I am too impulsive, I tell myself to stop and think before I do anything.
-3 -2 -1 +1 +2 +3
27. Even when I am terribly angry at someone, I consider my actions very carefully.
-3 -2 -1 +1 +2 +3
28. Facing the need to make a decision, I usually find out all the alternatives instead of deciding quickly and spontaneously.
-3 -2 -1 +1 +2 +3
29. Usually, I first do the things I really like to do even if there are more urgent things to do.
-3 -2 -1 +1 +2 +3
30. When I realize that I am going to be unavoidably late for an important meeting, I tell myself to keep calm.
-3 -2 -1 +1 +2 +3
31. When I feel pain in my body, I try to divert my thoughts from it.
-3 -2 -1 +1 +2 +3
32. When I am faced with a number of things to do, I usually plan my work.
-3 -2 -1 +1 +2 +3
33. When I am short of money, I decide to record all my expenses in order to budget more carefully in the future.
-3 -2 -1 +1 +2 +3
34. If I find it difficult to concentrate on a task, I divide it into smaller segments.
-3 -2 -1 +1 +2 +3
35. Quite often, I cannot overcome unpleasant thoughts that bother me.
-3 -2 -1 +1 +2 +3
36. When I am hungry and have no opportunity to eat, I try to divert my thoughts from my stomach or try to imagine that I am satisfied.
-3 -2 -1 +1 +2 +3

APPENDIX E
TRAUMA SYMPTOM INVENTORY

TSI Item Booklet- John Briere, Ph.D.

Please read all of these instructions carefully before beginning. Mark all of your answers on the accompanying answer sheet and write only where indicated. DO NOT write in this item booklet.

On the answer sheet, please write your name, the date, your age, and your race in the spaces provided.

This questionnaire contains 100 items describing experiences that may or may not have happened to you. Please circle the one answer that best indicates how often each of the following experiences have happened to you in the last 6 months.

Circle 0 if your answer is NEVER; it has not happened at all in the last 6 months.

Circle 1 or 2 if it has happened in the last 6 months, but has not happened often.

Circle 3 if your answer is OFTEN; it has happened in the last 6 months.

If you make a mistake or change your mind, DO NOT ERASE! Make an "X" through the incorrect response and then draw a circle around the correct response.

Please answer each item as honestly as you can. Be sure to answer every item. You can take as much time as you need to finish the TSI.

In the last 6 months, how often have you experienced:

(0 1 2 3)
Never Often

1. Nightmares or bad dreams
2. Trying to forget about a bad time in your life
3. Irritability
4. Stopping yourself from thinking about the past
5. Getting angry about something that wasn't very important
6. Feeling empty inside
7. Sadness
8. Flashbacks (sudden memories or images of upsetting things)
9. Not feeling satisfied about your sex life
10. Feeling like you were outside your body
11. Lower back pain
12. Sudden disturbing memories when you were not expecting them
13. Wanting to cry
14. Not feeling happy
15. Becoming angry for little or no reason
16. Feeling like you don't know who you really are
17. Feeling depressed
18. Having sex with someone you hardly knew
19. Thoughts or fantasies about hurting someone
20. Your mind going blank
21. Fainting
22. Periods of trembling or shaking
23. Pushing painful memories out of your mind
24. Not understanding why you did something
25. Threatening or attempting suicide
26. Feeling like you were watching yourself from far away
27. Feeling tense or "on edge"
28. Getting into trouble because of sex
29. Not feeling like your real self
30. Wishing you were dead
31. Worrying about things
32. Not being sure of what you want in life
33. Bad thoughts or feelings during sex
34. Being easily annoyed by other people
35. Starting arguments or picking fights to get your anger out

36. Having sex or being sexual to keep from feeling lonely or sad
37. Getting angry when you didn't want to
38. Not being able to feel your emotions
39. Confusion about your sexual feelings
40. Using drugs other than marijuana
41. Feeling jumpy
42. Absent-mindedness
43. Feeling paralyzed for minutes at a time
44. Needing other people to tell you what to do
45. Yelling or telling people off when you felt you shouldn't have
46. Flirting or "coming on" to someone to get attention
47. Sexual thoughts or feelings when you thought you shouldn't have them
48. Intentionally hurting yourself (for example, by scratching, cutting, or burning) even when you weren't trying to commit suicide
49. Aches and pains
50. Sexual fantasies about being dominated or overpowered
51. High anxiety
52. Problems in your sexual relations with another person
53. Wishing you had more money
55. Getting confused about what you thought or believed
56. Feeling tired
57. Feeling mad or angry inside
58. Getting into trouble because of your drinking
59. Staying away from certain people or places because they reminded you of something
60. One side of your body going numb
61. Wishing you could stop thinking about sex
62. Suddenly remembering something upsetting from your past
63. Wanting to hit someone or something
64. Feeling hopeless
65. Hearing someone talk to you who wasn't really there
66. Suddenly being reminded of something bad
67. Trying to block out certain memories
68. Sexual problems
69. Using sex to feel powerful or important
70. Violent dreams

71. Acting "sexy" even though you didn't really want sex
72. Just for a moment, seeing or hearing something upsetting that happened earlier in your life
73. Using sex to get love or attention
74. Frightening or upsetting thoughts popping into your mind
75. Getting your own feelings mixed up with someone else's
76. Wanting to have sex with someone you knew was bad for you
77. Feeling ashamed of your sexual feelings or behavior
78. Trying to keep from being alone
79. Losing your sense of taste
80. Your feelings or thoughts changing when you were with other people
81. Having sex that had to be kept secret from other people
82. Worrying that someone was trying to steal your ideas
83. Not letting yourself feel bad about the past
84. Feeling like things weren't real
85. Feeling like you were in a dream
86. Not eating or sleeping for 2 or more days
87. Trying not to have feelings about something that once hurt you
88. Daydreaming
89. Trying not to think or talk about things in your life that were painful
90. Feeling like life wasn't worth living
91. Being startled or frightened by sudden noises
92. Seeing people from the spirit world
93. Trouble controlling your temper
94. Being easily influenced by others
95. Wishing you didn't have any sexual feelings
96. Wanting to set fire to a public building
97. Feeling afraid you might die or be injured
98. Feeling so depressed that you avoided people
99. Thinking that someone was reading your mind
100. Feeling worthless

APPENDIX F
ACADEMIC PROBLEMS SCALE
COLLEGE ADJUSTMENT SCALES

C.A.S. Subject #: _____

Life Events Study

Researchers: Diedra Hayman, M.A. and Carolyn Tucker, Ph.D.

Score: _____

Directions:

Read each statement carefully and decide whether it is an accurate statement about you. For each item, circle the letter that best represents your opinion.

Circle "F" if the statement is FALSE or NOT AT ALL TRUE.

Circle "S" if the statement is SLIGHTLY TRUE.

Circle "M" if the statement is MAINLY TRUE.

Circle "V" if the statement is VERY TRUE.

- | | |
|---|---------|
| 1. I have poor study skills. | F S M V |
| 2. I have difficulty concentrating while studying. | F S M V |
| 3. I never find the time to study. | F S M V |
| 4. I seldom feel prepared for exams. | F S M V |
| 5. I organize my time poorly. | F S M V |
| 6. I'm satisfied with my academic performance. | F S M V |
| 7. As much as I try, I'm always behind in my schoolwork. | F S M V |
| 8. I think about dropping some classes. | F S M V |
| 9. Other students seem to study more than I do. | F S M V |
| 10. I seem to forget what I know when I take a test. | F S M V |
| 11. I'm inconsistent with my class work. | F S M V |
| 12. No matter how much I study, I can't seem to make good grades. | F S M V |

APPENDIX G
DEBRIEFING STATEMENT

Debriefing

Life Events Study

Researchers: Diedra Hayman, M.A., Carolyn Tucker, Ph.D.

Thank you for participating in our study. Your responses will be kept confidential and the data stored in a locked file in the Psychology Building at the University of Florida. Only the researchers will have access to this data. We realize that answering some of our questions may have been difficult for you. Some questions may have reminded you of painful events which may have made you feel anxious, or even tearful. We would like to invite you to take advantage of the counseling services offered here on campus.

General counseling is offered by licensed professionals at both the University Counseling Center.

Appointments can be made by calling the following number:

University Counseling Center - 231-6557

"Psychological and career counseling are available free to students and their partners.

Individual, couples, and group counseling services are available." The Center is located on the first floor of Henderson Hall.

Should you have further questions, you can contact the principal researcher, Diedra Hayman, by leaving a message in the main office of the University Counseling Center. Thank you, once again, for participating in our study.

REFERENCES

- Anton, W. D., & Reed, J.R. (1991). College Adjustment Scales Professional Manual, Odessa, FL: Psychological Assessment Resources.
- Antonovsky, A. (1990). Pathways leading to successful coping and health. In M. Rosenbaum, (Ed.), Learned resourcefulness: On coping skills, self-control, and adaptive behavior. New York: Springer Publishing Company.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. Psychological Review, 84, 191-215.
- Bandura, A. (1989). A self-regulation of motivation and action through internal standards and goal systems. In L.A. Pervin, (Ed.), Goal concepts in personality and social psychology. Hillsdale, NJ: Erlbaum.
- Baum, A., Cohen, L., & Hall, M. (1993). Control and intrusive memories as possible determinants of chronic stress. Psychosomatic Medicine, 55, 274-286.
- Biran, M.W. (1990). Resourcefulness and successful treatment of agoraphobia. In M.Rosenbaum, (Ed.), Learned resourcefulness: On coping skills, self-control, and adaptive behavior. New York: Springer Publishing Company.
- Borg, W.R., & Gall, M.D. (1989). Educational research: an introduction. New York: Longman
- Briere, J. (1995). Trauma symptom inventory professional manual. Odessa, FL: Psychological Assessment Resources, Inc.
- Briere, J., Elliott, D. M., Harris, K., & Cotman, A. (1995). Trauma symptom inventory: psychometrics and association with childhood and adult victimization in clinical samples. Journal of Interpersonal Violence, 10(4).
- Boney-McCoy, S. and Finkelhor, D. (1995). Psychosocial sequelae of violent victimization in a national youth sample. Journal of Consulting and Clinical Psychology, 63(5), 726-736.
- Breslau, N., Davis, G.C., Andreski, P., & Peterson, E. (1991). Traumatic events and posttraumatic stress disorder in an urban population of young adults. Archives of General Psychiatry, 48, 216-222.

- Burgess, A.W. (1984). Rape: Victims of Crisis. MD: Robert J. Brady, Co.
- Calvert, P. (1993). Learned resourcefulness and weight control self-efficacy: their relationship and their association with perceived weight satisfaction and level of past weight control success. Unpublished master's thesis, University of Florida, Gainesville..
- Cannon, W.B. (1939). The wisdom of the body. New York: Norton.
- Carey, M.P., Carey, K.B., Carnrike, C.L., & Meisler, A.W. (1990). Learned resourcefulness, drinking, and smoking in young adults. Journal of Psychology, 124(4).
- Carlson, B.E. (1984). Children's observations of interpersonal violence. In A.R. Roberts, (Ed), Battered women and their families: intervention strategies and treatment programs. New York: Springer.
- Charney, D.S., Deutch, A. Y., Krystal, J.H., Southwick, S.M., & Davis, M. (1993). Psychobiologic mechanisms in posttraumatic stress disorder. Archive of General Psychiatry, 50.
- Christianson, S. A., & Nilsson, L.G. (1984). Functional amnesia as induced by psychological trauma. Memory and Cognition, 12, 142-155.
- Cicchetti, D., & White, J.(1990). Emotion and developmental psychopathology. In N. Stein, B. Leventhal, & T. Trebasso (Eds.), Psychological and biological approaches to emotion. Hillsdale, NJ: Erlbaum.
- Cole, P. & Putnam, F.W. (1992). Effect of incest on self and social functioning: A developmental psychopathology perspective. Journal of Clinical and Consulting Psychology, 60, 174-184.
- Cozzi, L.M. (1991). The influence of hardiness, stress, and social support on academic achievement among urban commuter students (commuter students) (Doctoral dissertation, Fordham University, 1991). Dissertation Abstracts International, 52-04B, 2339.
- Craufurd, D.I.O., Creed, F., & Jayson, M.D. (1990). Life events and psychological disturbances in patients with low-back pain. Spine, 15, 490-494.

- Creed, F. (1993). Stress and psychosomatic disorders. In L. Goldberger, & S. Breznitz, (Eds.), Handbook of stress: theoretical and clinical aspects, New York: The Free Press.
- Davidson, J.R.T., Hughes, D., Blazer, D.G., & George, L.K. (1991). Post-traumatic stress disorder in the community: An epidemiological study. Psychological Medicine, 21, 713-721.
- Dunn, D.J. (1989). Learned resourcefulness, academic self-efficacy, and academic achievement in traditional and reentry students (Doctoral dissertation, Arizona State University, Arizona, 1989), Dissertation Abstracts International, 50-06A, 1576.
- Edwards, D. & Riordan, S. (1994). Learned resourcefulness in Black and White South African university students. Journal of Social Psychology, 134, 665-675.
- Federal Emergency Management Agency. (1997). Disaster activity, January 1, 1996 to December 31, 1996. Web document:
<http://www.fema.gov/home/library/diz96.htm>.
- Felson, G., & Wilcox, K. (1992). Influence of stress, situation-specific mastery beliefs, and satisfaction, and social support on well-being and academic performance. Psychological Reports, 70(1), 291-303.
- Foa, E.B., & Rothbaum, B.O. (1989). Behavioral psychotherapy for post-traumatic stress disorder. International Review of Psychiatry, 1, 219-226.
- Folkman, S. (1993). Psychosocial effects of HIV infection. In L. Goldberger, & S. Breznitz, (Eds.) Handbook of stress: theoretical and clinical aspects, New York: The Free Press.
- Folkman, S.A., Lazarus, R.S., Pimley, S., & Noacek, J. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. Journal of Personality and Social Psychology, 50, 992-1003.
- Foy, D.W., Rueger, D.B., Sippelle, R.C., & Carroll, E.M. (1984). Etiology of posttraumatic stress disorder in Vietnam veterans: Analysis of premilitary, military, and combat exposure influences. Journal of Consulting and Clinical Psychology, 52, 79-87.
- Frederick, C.J. (1990). Resourcefulness in coping with severe trauma: the case of the hostages. In M. Rosenbaum, (Ed.) Learned resourcefulness: On coping skills, self-control, and adaptive behavior, New York: Springer Publishing Company.

- Garrity, T., & Ries, J. (1985). Health status as a mediating factor in the life change-academic performance relationship. *Behavioral Medicine*, 11, 118-124.
- Goldberger, L. & Breznitz, S., Eds. (1993). *Handbook of stress: theoretical and clinical aspects*. New York: The Free Press.
- Gonchar, N. (1995). Post-traumatic stress disorder among inner city college students. *Journal of College Student Psychotherapy*, 9(3), 19-39.
- Green, B.L. (1990). Defining trauma: Terminology and generic stressor dimensions. *Journal of Applied Social Psychology*, 20, 1632-1642.
- Gruen, R. (1993). Stress and Depression: Toward the development of integrative models. In L. Goldberger, & S. Breznitz, (Eds.). *Handbook of Stress: Theoretical and Clinical Aspects*. New York: The Free Press.
- Hanson, J.C. (1993). State-anxiety, trait anxiety, and depression as a function of learned resourcefulness and level of stressful life events in parents of children with manifest disabilities (Doctoral dissertation: University of Southern Mississippi). *Dissertation Abstracts International*, 54-05B, 2753.
- Hebb, D.O. (1946). On the nature of fear. *Psychological Review*, 53, 259.
- Helzer, J.E., Robbins, L.N., & McEvoy, L. (1987). Post-traumatic stress disorder in the general population. *New England Journal of Medicine*, 317, 1630-1634.
- Herman, J.L. (1992). *Trauma and recovery: The aftermath of violence- -From domestic abuse to political terror*. New York: Basicbooks.
- Hopper, J. (1987). *Child abuse: statistics, research, and resources*, Web document: <http://www.jimhopper.com/abstats#boys>.
- Horowitz, M.J. (1986). *Stress response syndromes*. (2nd ed.). New Jersey: Aronson.
- House, A., Dennis, M., Mogridge, L., Hawton, K., & Warlow, C. (1990). Life events and difficulties preceding a stroke. *Journal of Neurology, Neurosurgery, and Psychiatry*, 53, 1024-1028.
- Hunter, K.C. (1994). The relationship of stress and student characteristics to the grade point average of black undergraduate students (Doctoral dissertation, University of Georgia), *Dissertation Abstracts International*, 45-06A, 1676.

- Janoff-Bulman, R., (1992). Shattered assumptions: Toward a new psychology of trauma. New York: Free Press.
- Katz, R.C., & Singh, N. (1986). A comparison of current smokers and self-cured quitters on Rosenbaum's Self-control Schedule. Addictive Behaviors, 11, 63-65.
- Kilpatrick, D.G., Saunders, B.E., Amick-McMullan, A., Best, C.L. (1989). Victim and crime factors associated with the development of crime-related posttraumatic stress disorder. Behavior Therapy, 20, 199-214.
- Kobasa, S.C. (1979). Stressful life events, personality, and health: An inquiry into hardiness. Journal of Personality and Social Psychology, 37(1).
- Kramer, T.H., Buckhout, R., Fox, P., & Widman, E. (1991). Effects of stress on recall. Applied Cognitive Psychology, 5(6), 483-488.
- Lazarus, R. S. (1993). Why we should think of stress as a subset of emotion. In L. Goldberger, & S. Breznitz, (Eds.) Handbook of stress: theoretical and clinical aspects. New York: The Free Press.
- Lazarus, R.S. & Folkman, S. (1984). Stress, appraisal, and coping. New York: Springer Publishing Company.
- Lewinsohn, O. M., & Alexander, C.A. (1990). Learned resourcefulness and depression. In M. Rosenbaum, (Ed.) Learned resourcefulness: On coping skills, self-control, and adaptive behavior. New York: Springer Publishing Company.
- Lloyd, C., Alexander, A.A., Rice, D.G., & Greenfield, N.S. (1980). Life events as predictors as predictors of academic performance. Journal of Human Stress, 6, 15-25.
- Loevinger, J. (1976). Ego development: Conceptions and theories. San Francisco: Jossey-Bass.
- Loftus, E.F., & Burns, T.E. (1982). Mental shock can produce retrograde amnesia. Memory and Cognition, 10, 318-323.
- Malcolm, M.I. (1985). Learned resourcefulness, depression, and self-esteem. IRCS Medical Science: Psychology and Psychiatry, 13, 816-817.
- Malmquist, C.P. (1984). Children who witness parental murder: Post-traumatic and legal issues. Journal of the American Academy of Child Psychiatry, 25, 320-325.

- Mandler, G. (1993). Thought, memory, and learning: effects of emotional stress. In L. Goldberger, & S. Breznitz, (Eds.), Handbook of stress: Theoretical and clinical aspects, New York: The Free Press.
- Mandler, G. & Watson, D.L.(1966). Anxiety and the interruption of behavior. In C.D. Spielberger (Ed.), Anxiety and Behavior. New York: Academic Press.
- Maxmen, J.S., & Ward, N.G. (1995). Essential psychopathology and it's treatment (2nd ed., Revised for DSM-IV). New York: W.W. Norton & Company.
- McFarlane, A. C., & Girolamo, G. (1996). The nature of traumatic stressors and the epidemiology of posttraumatic reactions. In B.Van der Kolk, A. McFarlane, & L. Weisaeth, (Eds.). Traumatic stress: The effects of overwhelming experience on mind, body, and society. New York: The Guilford Press.
- McFarlane, A.C., Yehuda, R. (1996). Resilience, vulnerability, and the course of posttraumatic reactions. In B.Van der Kolk, A. McFarlane, & L. Weisaeth, (Eds.). Traumatic stress: The effects of overwhelming experience on mind, body, and society. New York: The Guilford Press.
- Miller, S.M. (1990). To see or not to see: Cognitive informational styles in the coping process. In M. Rosenbaum, (Ed.), Learned resourcefulness: On coping skills, self-control, and adaptive behavior. New York: Springer Publishing Company.
- Moos, R.H., A& Shafer, J.A. (1993). Coping resources: current concepts and measures. In L. Goldberger, & S. Breznitz, (Eds.), Handbook of stress: Theoretical and clinical aspects, New York: The Free Press.
- Morrison, J. (1995). DSM-IV made easy: The clinician's guide to diagnosis. New York: The Guilford Press.
- Nadler, A. (1990). Help-seeking Behavior as a coping resource. In M. Rosenbaum, (Ed.) Learned resourcefulness: On coping skills, self-control, and adaptive behavior. New York: Springer Publishing Company.
- Orr, E. & Westman, M. (1990). Does hardiness moderate stress, and how?: A review. In M. Rosenbaum, (Ed.), Learned resourcefulness: On coping skills, self-control, and adaptive behavior. New York: Springer Publishing Company.
- Petrie, T.A. & Russell, R.K. (1995). Academic and psychosocial antecedents of academic performance for minority and nonminority college football players. Journal of Counseling and Development, 73.

- Peyser, H. (1993). Stress, ethyl alcohol, and alcoholism. In L. Goldberger, & S. Breznitz, (Eds.), Handbook of stress: Theoretical and clinical aspects, New York: The Free Press
- Pfouts, J., Schopler, J., & Henley, H.C. (1982). Forgotten victims of family violence. Social Work, 27, 367-368.
- Ptacek, J.T., Smith, R.E., & Dodge, K.L. (1994). Gender differences in coping with stress: when stressor and appraisals do not differ., Personality and Social Psychology Bulletin 20(4).
- Pynoos, R.S., & Eth, S. (1985). Children traumatized by witnessing acts of personal violence: Homicide, rape and suicide behavior. In S. Eth, & R.S. Pynoos, (Eds.), Post-traumatic stress disorder in children. Washington, DC: American Psychiatric Press.
- Pynoos, R.S. & Nader, K. (1988). Children's memory and proximity to violence. Journal of the American Academy of Child and Adolescent Psychiatry, 28, 236-244.
- Pynoos, R.S., Sorenson, S.B., & Streinberg, A.M. (1993). Interpersonal violence and traumatic stress reactions. In L. Goldberger, & S. Breznitz, (Eds.), Handbook of stress: Theoretical and clinical aspects, New York: The Free Press
- Rabkin, J.G. (1993). Stress and psychiatric disorders. In L. Goldberger, & S. Breznitz, (Eds.), Handbook of stress: Theoretical and clinical aspects, New York: The Free Press
- Rothbaum, B.O., Dancu, C., Riggs, D.S., & Foa, E.B. (1990). The PTSD Symptom Scale. Presented at European Association of Behavior Therapy conference, Paris, France.
- Resick, P.A. (1988). Reactions of female and male victims of robbery (Final Report, Grant # MH37296). Washington, D.C.: National Institute of Justice.
- Resnick, H.S., Kilpatrick, D.G., Dansky, B.S., Saunders, B.E., & Best, C.L. (1993). Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. Journal of Consulting and Clinical Psychology, 61(6).
- Riggs, D.S., & Rothbaum, B.O., Foa, E.B. (1995). Journal of Interpersonal Violence, 10(2).
- Rosenbaum, M. (1980). A schedule for assessing self-control behaviors: Preliminary findings. Behavior Therapy, 11, 109-121.

- Rosenbaum, M. (1990). The role of learned resourcefulness in the self-control of health behavior. In M. Rosenbaum, (Ed.) Learned resourcefulness: On coping skills, self-control, and adaptive behavior. New York: Springer Publishing Company.
- Rosenbaum, M., (Ed.) Learned resourcefulness: On coping skills, self-control, and adaptive behavior. New York: Springer Publishing Company.
- Rosenbaum, M., & Ben-Ari Smira, K. (1986). Cognitive and personality factors in the delay of immediate gratification of hemodialysis patients. Journal of Personality and Social Psychology, 51, 357-364.
- Rosenbaum, M., & Palmon, N., (1984). Helplessness and resourcefulness in coping with epilepsy. Journal of Consulting and Clinical Psychology, 52, 244-253.
- Salter, A.C. (1995). Transforming trauma: A guide to understanding and treating adult survivors of child sexual abuse. Thousand Oaks, CA: Sage Publications.
- Santiago-Rivera, A. L., Bernstein, B.L., & Gard, T.L. (1995). The importance of achievement and the appraisal of stressful events as predictors of coping. Journal of College Student Development, 36(4).
- Russell, D.E.H. (1983). The incidence and prevalence of intrafamilial and extrafamilial sexual abuse of female children. Child Abuse and Neglect, 7, 133-146.
- Shalev, A.Y. (1996). Stress versus traumatic stress: From acute homeostatic reactions to chronic psychopathology. In B. Van der Kolk, A. McFarlane, & L. Weisaeth, (Eds.). Traumatic stress: The effects of overwhelming experience on mind, body, and society. New York: The Guilford Press.
- Scheier, M.F., & Carver, C.S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. Health Psychology, 4, 219-247.
- Scheier, M.F., & Carver, C.S. (1987). Dispositional optimism and physical well-being: The influence of generalized outcome expectancies on health. Journal of Personality, 55, 169-210. Segal, S.A., & Figley, C.R. (1988). Stressful events. Hospital and Community Psychiatry, 39(9), 998.
- Selye, H., (1936) A syndrome produced by diverse noxious agents. Nature, 138(32).
- Selye, H., (1993) History of the concept of stress. In L. Goldberger, & S. Breznitz, (Eds.), Handbook of stress: Theoretical and clinical aspects, New York: The Free Press.

- Staats, A.W. (1975). Social behaviorism, Homewood, IL: Dorsey.
- Straus, M., Gelles, R., & Steinmetz, S. (1985). Behind closed doors: Violence in the american family. New York: Anchor Books.
- Terr, L.C. (1988). What happens to early memories of trauma? Journal of the American Academy of Child and Adolescent Psychiatry, 1, 96-104.
- Van der Kolk, B. (1996a). The complexity of adaptation to trauma: self-regulation, stimulus discrimination, and characterological development. In B. Van der Kolk, A. McFarlane, L. Weisaeth, (Eds.), Traumatic stress: The effects of overwhelming experience on mind, body, and society. New York: The Guilford Press.
- Van der Kolk, B. (1996b). Trauma and memory. In Van der Kolk, B., McFarlane, A., Weisaeth, (Eds.), Traumatic stress: The effects of overwhelming experience on mind, body, and society. New York: The Guilford Press.
- Van der Kolk, B., McFarlane, A., & Weisaeth, L. (Eds.) (1996). Traumatic stress: The effects of overwhelming experience on mind, body, and society. New York: The Guilford Press.
- Van der Kolk, B., Weisaeth, L., & Van der Hart, O. (1996b). History of trauma in psychiatry. In B. Van der Kolk, A. McFarlane, & L. Weisaeth, (Eds.), Traumatic stress: The effects of overwhelming experience on mind, body, and society. New York: The Guilford Press.
- Vrana, S., & Lauterbach, D. (1994). Prevalence of traumatic events and post-traumatic psychological symptoms in a nonclinical sample of college students. Journal of Traumatic Stress, 7(2), 289-302.
- Veatch, D. (1995). Posttraumatic stress disorder in adults who have experienced parental psychological maltreatment, physical violence, and physical abuse as adolescents and children. (Doctoral dissertation, University of Northern Colorado, 1995). Dissertation Abstracts International, 56-08B, 4595.
- Weisaeth, L. (1993). Disasters: psychological and psychiatric aspects. In L. Goldberger, & S. Breznitz, (Eds.), Handbook of stress: Theoretical and clinical aspects, New York: The Free Press.
- Wendell, A. (1987). He relationship between anxiety, stress, and the retrieval of information from long-term memory. (Doctoral dissertation, City University of New York, 1987). Dissertation Abstracts International, 48-05A, 1158.

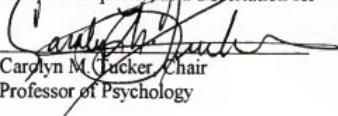
- Wiebe, D.J. (1988). The role of hardiness in moderating the impact of stress. (Doctoral dissertation, University of Alabama at Birmingham, 1988). Dissertation Abstracts International, 50-03B, 1128.
- Wise, M. (1983, March). Posttraumatic stress disorder: The human reaction to catastrophe. Drug Therapy.
- Winfield, I., George, L.K., Swartz, M., & Blazer, D.G. (1990). Sexual assault and psychiatric disorders among a community sample of women. American Journal of Psychiatry, 147, 335-341.
- Yerkes, R.M., & Dodson, J.D. (1908). The relation of strength of stimulus to rapidity of habit formation. Journal of Comparative and Neurological Psychology, 18, 459-482.

BIOGRAPHICAL SKETCH

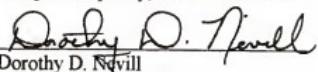
Diedra Thompson Hayman was born in Tyler, Texas, on February 12, 1964. She resides in the state of Virginia. She graduated from North Miami Beach Senior High School in June 1981. Diedra received her Bachelor of Business Administration degree from Texas Christian University in 1985, and her Master of Arts degree in school counseling in 1988.

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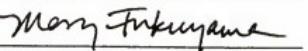
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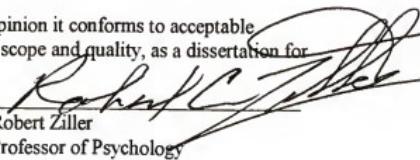
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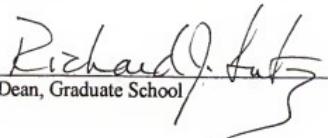

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This dissertation was submitted to the Graduate Faculty of the Department of Psychology in the College of Liberal Arts and Sciences and to the Graduate School, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

August 1998


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